Green-e® References and Endorsements

PUBLICATION DATE: JUNE 1, 2024

CRS™

Table of Contents

Introduction 3

Green-e® International Citations 4

AASHE STARS 5

ASHRAE 8

B Corporation 10

BSR 11

CDP 14

Energy Efficient Codes Coalition (EECC) 17

Global Electronics Council (GEC) 18

Green Restaurant Association 19

Greenhouse Gas Protocol 20

International Code Council (ICC) 21

International Living Future Institute 22

RE100 24

Sustainability Accounting Standards Board (SASB) 28

U.S. Green Building Council (USGBC) LEED 29

World Resources Institute (WRI) 31

Green-e® U.S./Canada Citations 33

Canada Green Building Council (CAGBC) 34

MeetGreen® 35

National Renewable Energy Laboratory (NREL) 36

Natural Resources Defense Council (NRDC) 37

Sustainable Purchasing Leadership Council (SPLC) 39

U.S. Department of Energy 42

United States Environmental Protection Agency (US EPA) 46

Introduction

References to Green-e® Certification Programs

There are many organizations that develop standards and certifications to support progress toward a clean energy future. These U.S./Canada National and International organizations and associations promote renewable energy use, energy efficiency, and/or actions that quickly and effectively reduce negative environmental impacts.

3rd party certification, as offered by CRS's Green-e® Programs, provides energy buyers with independent assurances that their purchase is making an important beneficial impact on the environment. Many standard setters, NGOs, and government agencies recommend Green-e® or "certification" in guidance, requirements, or choose it for their own purchasing.

Those organizations that reference Green-e® certification in public materials are collected in the pages that follow.

For more information about the Green-e® certification programs visit www.green-e.org

Green-e® International Citations

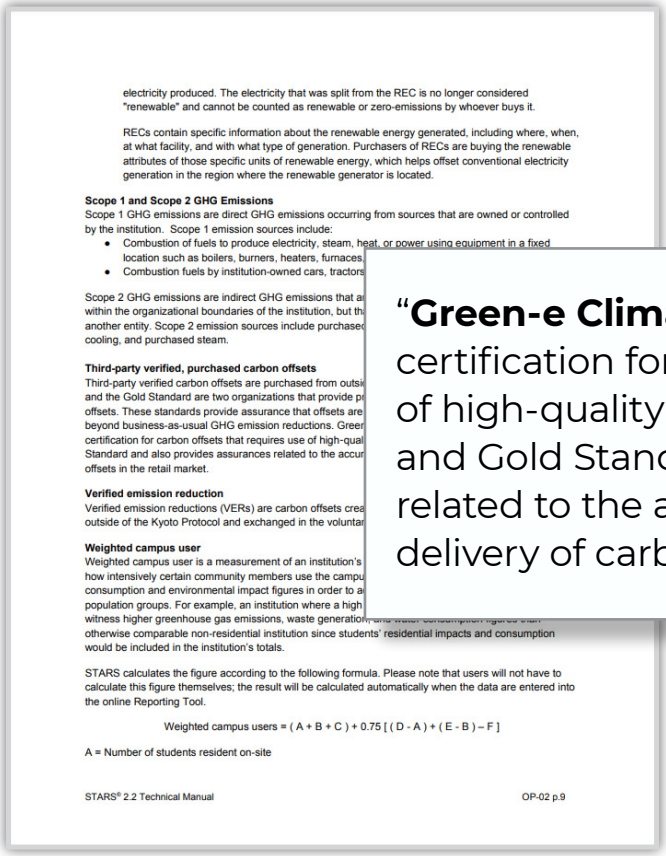
CRS

The Association for the Advancement of Sustainability in Higher Education's Sustainability Tracking, Assessment & Rating System (AASHE STARS)

- A project of the Association for the Advancement of Sustainability in Higher Education (AASHE), STARS is intended to engage and recognize the full spectrum of colleges and universities—from community colleges to research universities, and from institutions just starting their sustainability programs to long-time campus sustainability leaders
- Institutions that are pursuing a STARS Bronze, Silver, Gold or Platinum rating earn points for purchased RECs that are Green-e® Energy certified

AASHE STARS OP 2: Greenhouse Gas (GHG) Emissions

- Green-e® Energy and Green-e® Climate are referenced in points awarded for measuring and reducing Greenhouse Gas (GHG) Emissions (OP 2) in the Sustainability Tracking, Assessment & Rating System (STARS) v2.2



electricity produced. The electricity that was split from the REC is no longer considered "renewable" and cannot be counted as renewable or zero-emissions by whoever buys it.

RECs contain specific information about the renewable energy generated, including where, when, at what facility, and with what type of generation. Purchasers of RECs are buying the renewable attributes of those specific units of renewable energy, which helps offset conventional electricity generation in the region where the renewable generator is located.

Scope 1 and Scope 2 GHG Emissions

Scope 1 GHG emissions are direct GHG emissions occurring from sources that are owned or controlled by the institution. Scope 1 emission sources include:

- Combustion of fuels to produce electricity, steam, heat, or power using equipment in a fixed location such as boilers, burners, heaters, furnaces
- Combustion fuels by institution-owned cars, tractors

Scope 2 GHG emissions are indirect GHG emissions that a within the organizational boundaries of the institution, but th another entity. Scope 2 emission sources include purchase cooling, and purchased steam.

Third-party verified, purchased carbon offsets

Third-party verified carbon offsets are purchased from outsi and the Gold Standard are two organizations that provide p offsets. These standards provide assurance that offsets are beyond business-as-usual GHG emission reductions. Gree certification for carbon offsets that requires use of high-qual Standard and also provides assurances related to the accur offsets in the retail market.

Verified emission reduction

Verified emission reductions (VERs) are carbon offsets crea outside of the Kyoto Protocol and exchanged in the voluntar

Weighted campus user

Weighted campus user is a measurement of an institution's how intensively certain community members use the campu consumption and environmental impact figures in order to a population groups. For example, an institution where a high witness higher greenhouse gas emissions, waste generation otherwise comparable non-residential institution since students' residential impacts and consumption would be included in the institution's totals.

STARS calculates the figure according to the following formula. Please note that users will not have to calculate this figure themselves; the result will be calculated automatically when the data are entered into the online Reporting Tool.

Weighted campus users = (A + B + C) + 0.75 [(D - A) + (E - B) – F]

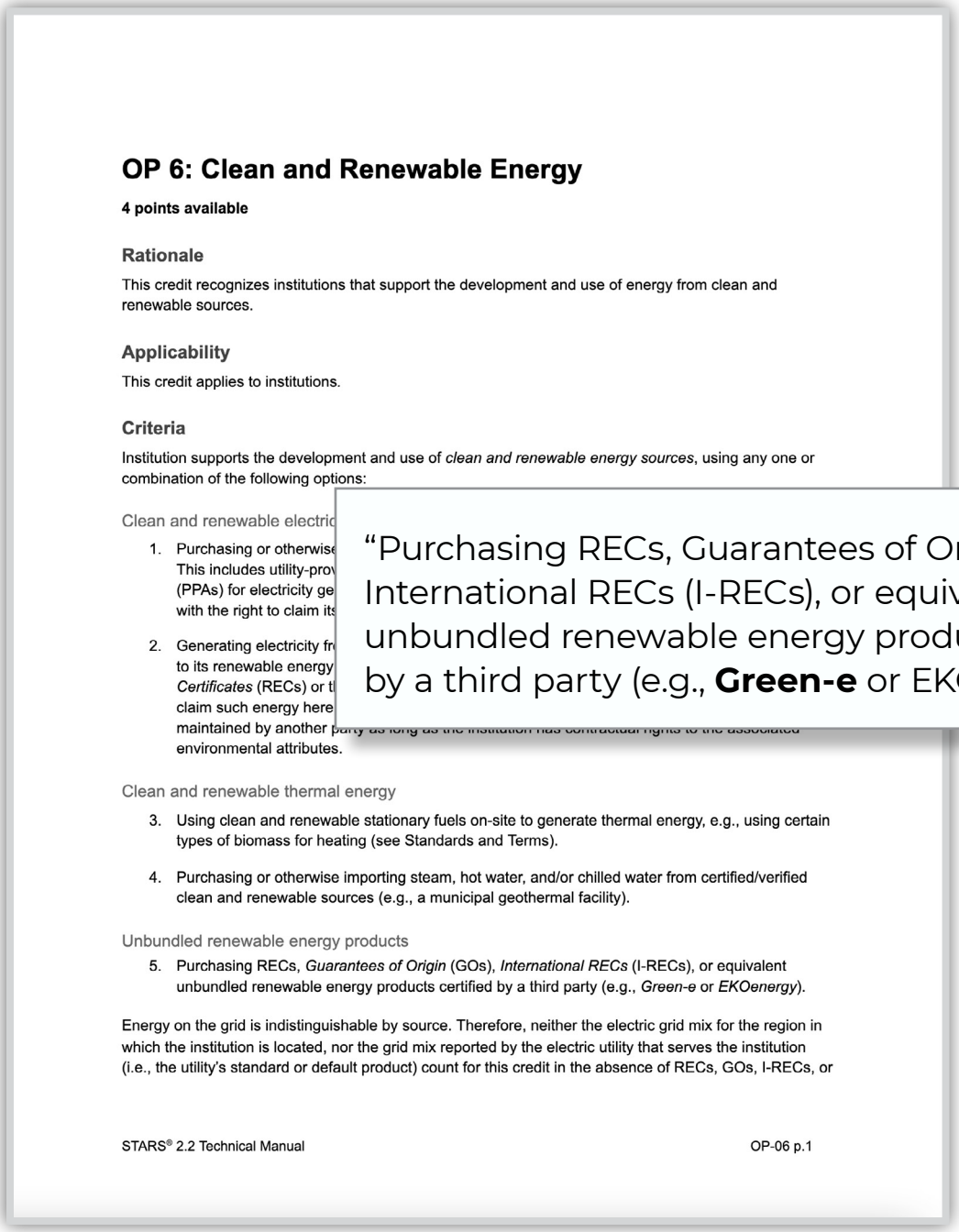
A = Number of students resident on-site

STARS® 2.2 Technical Manual OP-02 p.9

"**Green-e Climate** is a retail standard and certification for carbon offsets that requires use of high-quality offset project standards like VCS and Gold Standard and also provide assurances related to the accurate and exclusive sale and delivery of carbon offsets in the retail market."

AASHE STARS OP 6: Clean and Renewable Energy

- Green-e® Energy and Green-e® Climate are referenced in points awarded for generating, using, and/or purchasing Clean and Renewable Energy (OP 6) in the Sustainability Tracking, Assessment & Rating System (STARS) v2.2



OP 6: Clean and Renewable Energy

4 points available

Rationale

This credit recognizes institutions that support the development and use of energy from clean and renewable sources.

Applicability

This credit applies to institutions.

Criteria

Institution supports the development and use of *clean and renewable energy sources*, using any one or combination of the following options:

Clean and renewable electric

1. Purchasing or otherwise
   This includes utility-prov
   (PPAs) for electricity ge
   with the right to claim its
2. Generating electricity fr
   to its renewable energy
   Certificates (RECs) or t
   claim such energy here
   maintained by another party as long as the institution has contractual rights to the associated environmental attributes.

Clean and renewable thermal energy

3. Using clean and renewable stationary fuels on-site to generate thermal energy, e.g., using certain types of biomass for heating (see Standards and Terms).
4. Purchasing or otherwise importing steam, hot water, and/or chilled water from certified/verified clean and renewable sources (e.g., a municipal geothermal facility).

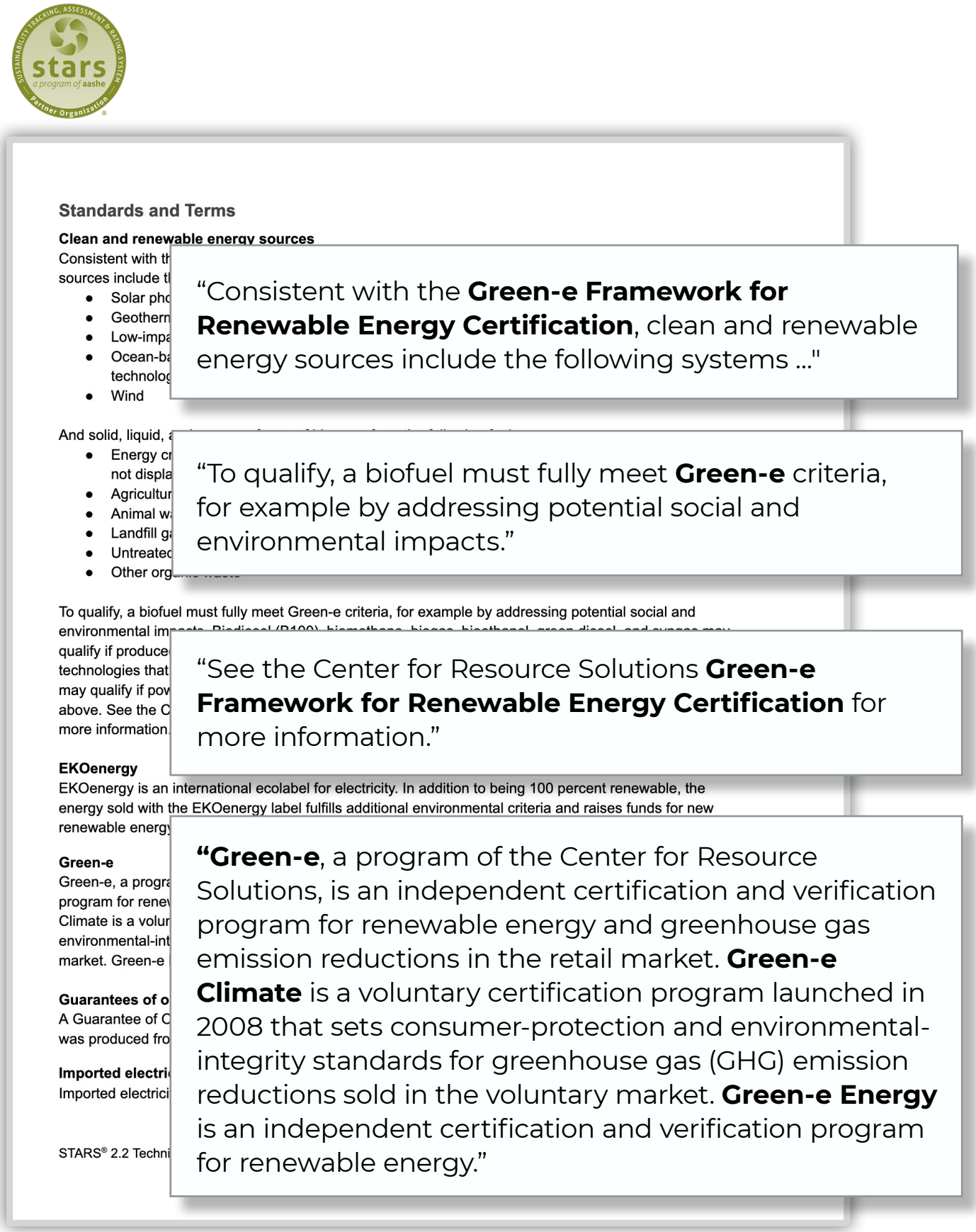
Unbundled renewable energy products

5. Purchasing RECs, *Guarantees of Origin* (GOs), *International RECs* (I-RECs), or equivalent unbundled renewable energy products certified by a third party (e.g., *Green-e* or *EKOenergy*).

Energy on the grid is indistinguishable by source. Therefore, neither the electric grid mix for the region in which the institution is located, nor the grid mix reported by the electric utility that serves the institution (i.e., the utility's standard or default product) count for this credit in the absence of RECs, GOs, I-RECs, or

STARS® 2.2 Technical Manual OP-06 p.1

> "Purchasing RECs, Guarantees of Origin (GOs), International RECs (I-RECs), or equivalent unbundled renewable energy products certified by a third party (e.g., **Green-e** or EKOenergy)."



Standards and Terms

Clean and renewable energy sources

Consistent with th
sources include t

- Solar pho
- Geothern
- Low-impa
- Ocean-ba technolog
- Wind

And solid, liquid, a

- Energy cr not displa
- Agricultur
- Animal wa
- Landfill ga
- Untreated
- Other org

To qualify, a biofuel must fully meet Green-e criteria, for example by addressing potential social and environmental im
qualify if produce
technologies that
may qualify if pow
above. See the C
more information.

EKOenergy

EKOenergy is an international ecolabel for electricity. In addition to being 100 percent renewable, the energy sold with the EKOenergy label fulfills additional environmental criteria and raises funds for new renewable energy

Green-e

Green-e, a progra
program for renew
Climate is a volur
environmental-int
market. Green-e

Guarantees of o

A Guarantee of C
was produced fro

Imported electri

Imported electrici

STARS® 2.2 Techni

"Consistent with the **Green-e Framework for Renewable Energy Certification**, clean and renewable energy sources include the following systems ..."

"To qualify, a biofuel must fully meet **Green-e** criteria, for example by addressing potential social and environmental impacts."

"See the Center for Resource Solutions **Green-e Framework for Renewable Energy Certification** for more information."

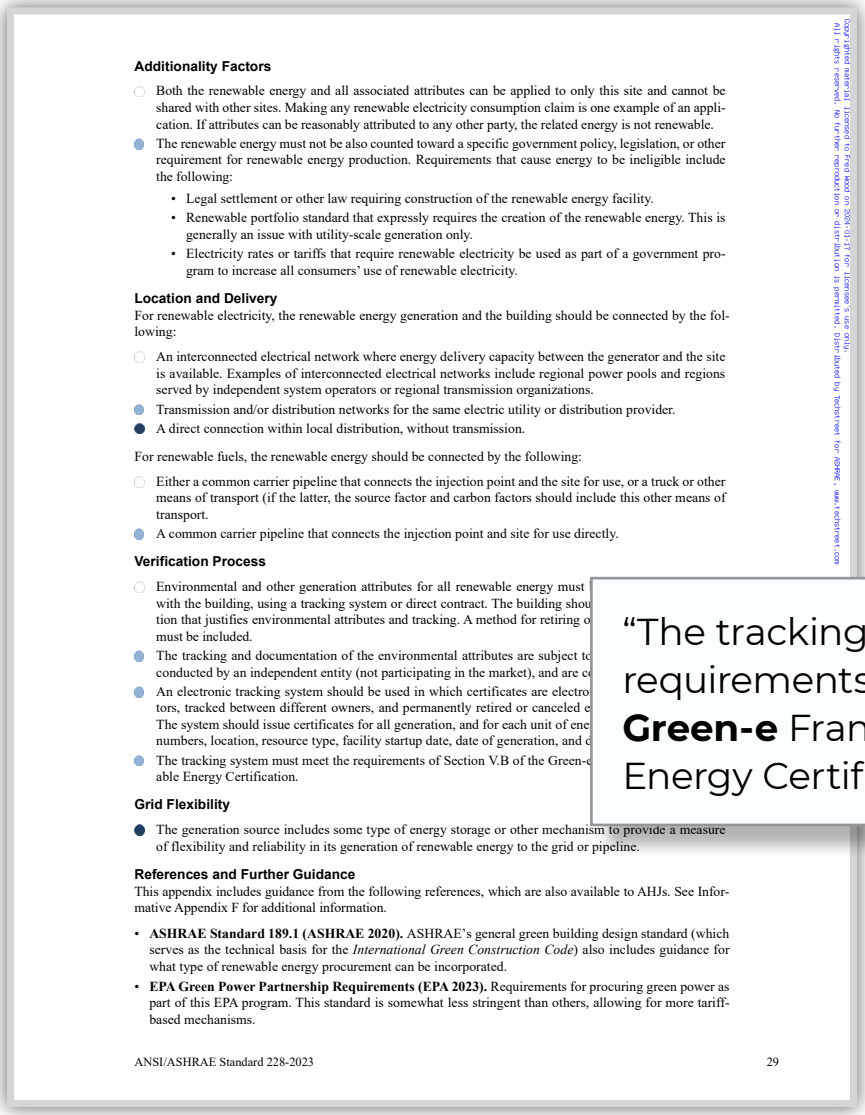
"Green-e, a program of the Center for Resource Solutions, is an independent certification and verification program for renewable energy and greenhouse gas emission reductions in the retail market. **Green-e Climate** is a voluntary certification program launched in 2008 that sets consumer-protection and environmental-integrity standards for greenhouse gas (GHG) emission reductions sold in the voluntary market. **Green-e Energy** is an independent certification and verification program for renewable energy."

ASHRAE

- "ASHRAE, founded in 1894, is a global society advancing human well-being through sustainable technology for the built environment."

Standard Method of Evaluating Zero Net Energy and Zero Net Carbon Building Performance

- Green-e® Energy and Renewable Fuels programs mentioned throughout ASHRAE's Standard Method of Evaluating Zero Net Energy and Zero Net Carbon Building Performance



Additionality Factors

- Both the renewable energy and all associated attributes can be applied to only this site and cannot be shared with other sites. Making any renewable electricity consumption claim is one example of an application. If attributes can be reasonably attributed to any other party, the related energy is not renewable.
- The renewable energy must not be also counted toward a specific government policy, legislation, or other requirement for renewable energy production. Requirements that cause energy to be ineligible include the following:
  - Legal settlement or other law requiring construction of the renewable energy facility.
  - Renewable portfolio standard that expressly requires the creation of the renewable energy. This is generally an issue with utility-scale generation only.
  - Electricity rates or tariffs that require renewable electricity be used as part of a government program to increase all consumers' use of renewable electricity.

Location and Delivery

For renewable electricity, the renewable energy generation and the building should be connected by the following:

- An interconnected electrical network where energy delivery capacity between the generator and the site is available. Examples of interconnected electrical networks include regional power pools and regions served by independent system operators or regional transmission organizations.
- Transmission and/or distribution networks for the same electric utility or distribution provider.
- A direct connection within local distribution, without transmission.

For renewable fuels, the renewable energy should be connected by the following:

- Either a common carrier pipeline that connects the injection point and the site for use, or a truck or other means of transport (if the latter, the source factor and carbon factors should include this other means of transport.
- A common carrier pipeline that connects the injection point and site for use directly.

Verification Process

- Environmental and other generation attributes for all renewable energy must
- The tracking and documentation of the environmental attributes are subject to
- An electronic tracking system should be used in which certificates are electro
- The tracking system must meet the requirements of Section V.B of the Green-e

Grid Flexibility

- The generation source includes some type of energy storage or other mechanism to provide a measure of flexibility and reliability in its generation of renewable energy to the grid or pipeline.

References and Further Guidance

This appendix includes guidance from the following references, which are also available to AHJs. See Informative Appendix F for additional information.

- **ASHRAE Standard 189.1 (ASHRAE 2020).** ASHRAE's general green building design standard (which serves as the technical basis for the *International Green Construction Code*) also includes guidance for what type of renewable energy procurement can be incorporated.
- **EPA Green Power Partnership Requirements (EPA 2023).** Requirements for procuring green power as part of this EPA program. This standard is somewhat less stringent than others, allowing for more tariff-based mechanisms.

ANSI/ASHRAE Standard 228-2023 29

"The tracking system must meet the requirements of Section V.B of the **Green-e** Framework for Renewable Energy Certification."

- **Green-e Framework for Renewable Energy Certification (CRS 2017).** The defining standard for a popular certification program for renewable procurement. Detailed language to evaluate types of procurement.
- **Green-e Renewable Fuels Standard for Canada and the United States (CRS 2017).** The defining standard for the use of nonelectric fuels in this popular certification program for renewable procurement. Detailed language to evaluate types of fuel and procurement instruments.
- **Making Credible Renewable Electricity Usage Claims (CDP 2016).** A white paper providing best practices to companies and other entities for procuring renewable energy toward.
- **Policies for Enabling Corporate Sourcing of Renewable Energy Internationally (NREL 2017).** A report guiding governments and other policy-making entities to provide the right policies and initiatives to promote procurement of renewable energy.
- **ZERO Code Off-Site Procurement of Renewable Energy; Technical Support Document (Architecture 230 2020).** This technical support document describes in detail how off-site renewable energy is treated within the ZERO Code, which is a standard for net-zero carbon building design.
- **Solar Energy Industries Association Model Leases and PPAs (SEIA 2020).** A library of model contracts that was originally developed under the Solar Access to Public Capital working group but is now managed (and endorsed) by SEIA for ongoing use.

"**Green-e** Framework for Renewable Energy Certification (CRS 2017). The defining standard for a popular certification program for renewable procurement. Detailed language to evaluate types of procurement."

"**Green-e** Renewable Fuels Standard for Canada and the United States (CRS 2017). The defining standard for the use of nonelectric fuels in this popular certification program for renewable procurement. Detailed language to evaluate types of fuel and procurement instruments."

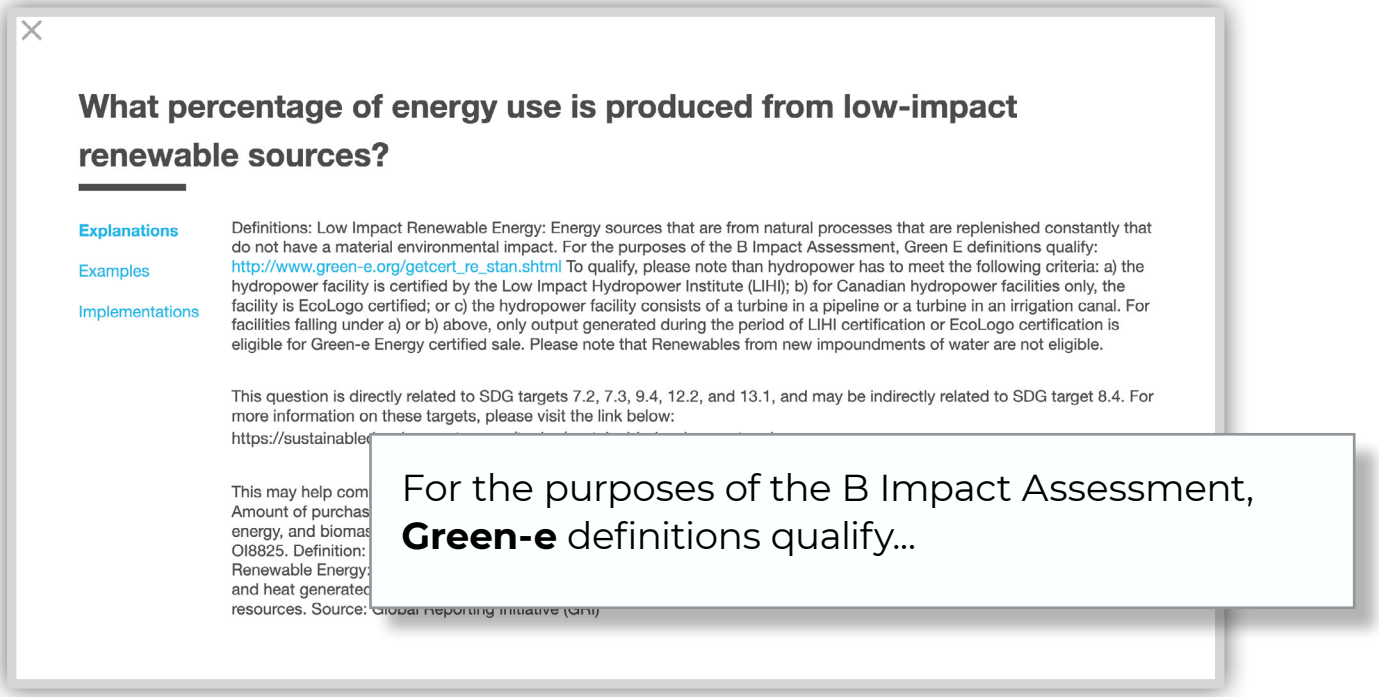
Certified B Corporation

B Corporation

- Certified B Corporations meet comprehensive and transparent social and environmental standards and legally expand their corporate responsibilities to include consideration of interests of all stakeholders, including employees, suppliers, community and the environment
- By becoming a B Corporation, companies leverage their leadership to influence the market beyond the success of their individual company, helping to build a new sector of the economy which harnesses the power of private enterprise for public benefit
- Over the long term, the growing B Corporation community builds constituency for the creation of mission-aligned capital markets and tax, investment, and purchasing incentives for B Corporations

B Impact Assessment

- Green-e® explained and referenced in the Explanation tab of the question "What percentage of energy use is produced from low-impact renewable sources?"
- In order to access this reference, an account must be created



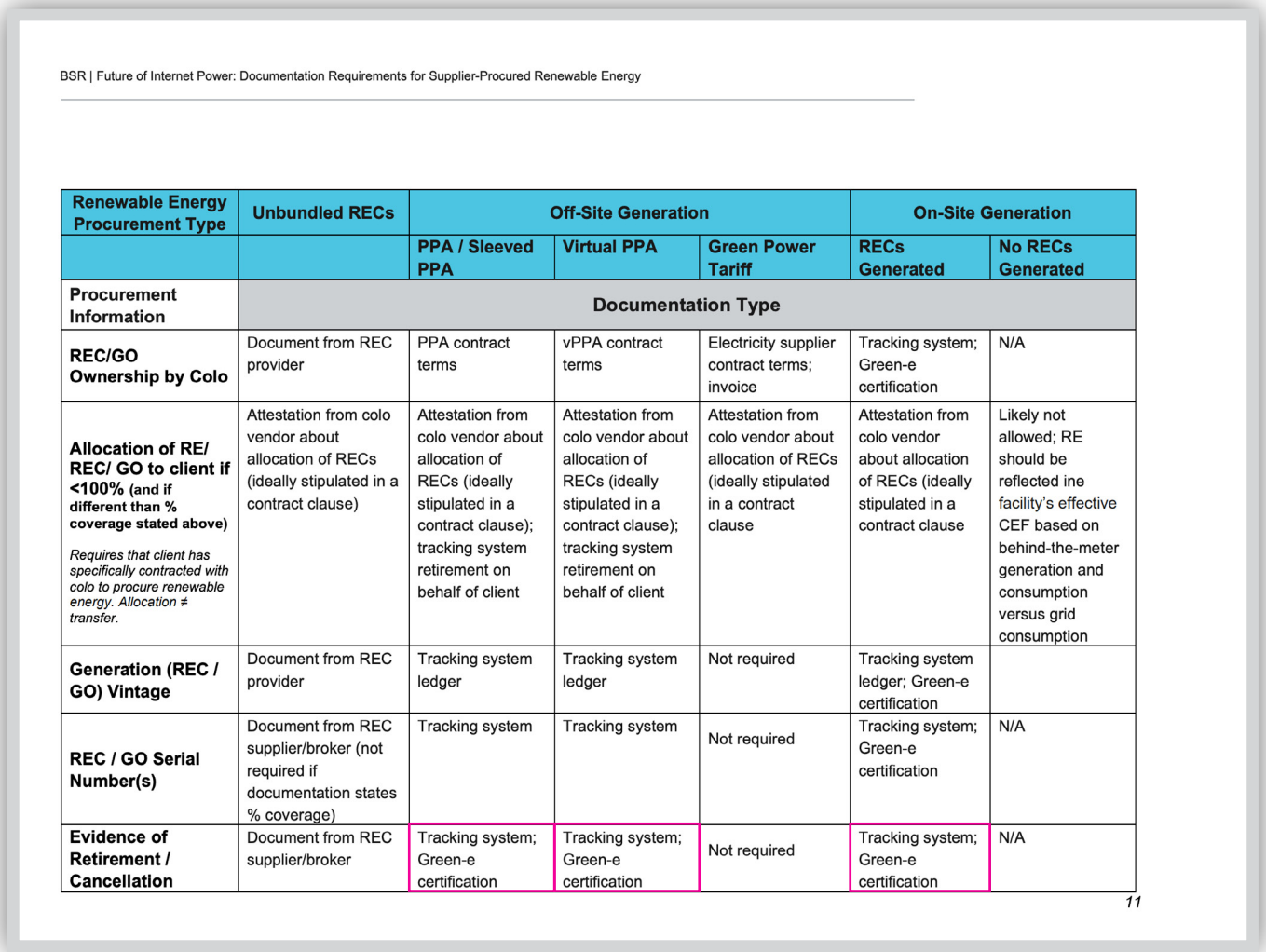
Note: *This quote was obtained from a source that requires login access.*

BSR

- "BSR™ is a sustainable business network and consultancy focused on creating a world in which all people can thrive on a healthy planet. With offices in Asia, Europe, and North America, BSR™ provides its 300+ member companies with insight, advice, and collaborative initiatives to help them see a changing world more clearly, create long-term value, and scale impact"

Documentation Requirements for Supplier-Procured Renewable Energy

- Green-e® recommended by BSR for certain renewable energy procurement types

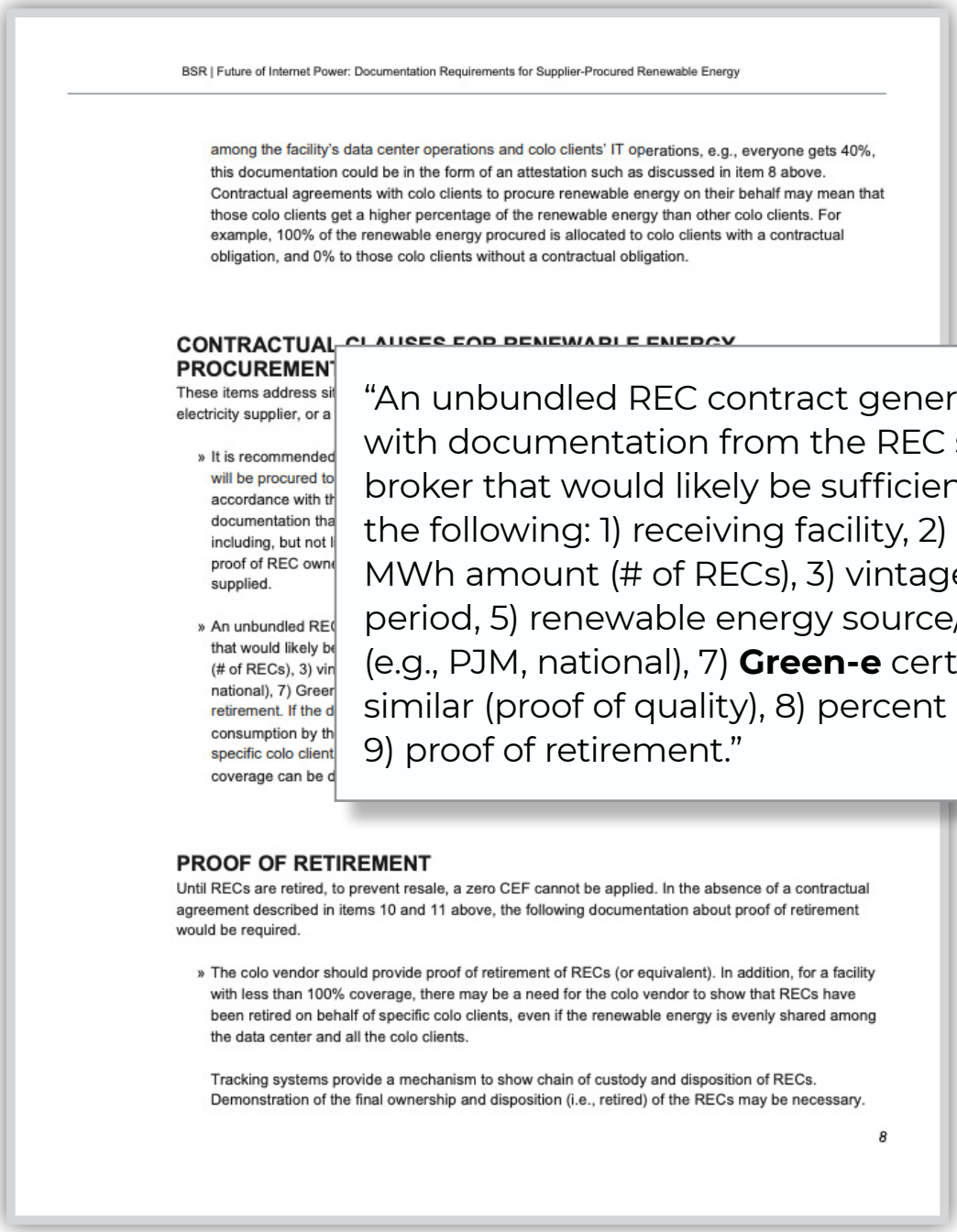


BSR | Future of Internet Power: Documentation Requirements for Supplier-Procured Renewable Energy

Renewable Energy Procurement Type	Unbundled RECs	Off-Site Generation			On-Site Generation	
		PPA / Sleeved PPA	Virtual PPA	Green Power Tariff	RECs Generated	No RECs Generated
Procurement Information	**Documentation Type**					
REC/GO Ownership by Colo	Document from REC provider	PPA contract terms	vPPA contract terms	Electricity supplier contract terms; invoice	Tracking system; Green-e certification	N/A
Allocation of RE/ REC/ GO to client if <100% (and if different than % coverage stated above) *Requires that client has specifically contracted with colo to procure renewable energy. Allocation ≠ transfer.*	Attestation from colo vendor about allocation of RECs (ideally stipulated in a contract clause)	Attestation from colo vendor about allocation of RECs (ideally stipulated in a contract clause); tracking system retirement on behalf of client	Attestation from colo vendor about allocation of RECs (ideally stipulated in a contract clause); tracking system retirement on behalf of client	Attestation from colo vendor about allocation of RECs (ideally stipulated in a contract clause	Attestation from colo vendor about allocation of RECs (ideally stipulated in a contract clause	Likely not allowed; RE should be reflected ine facility's effective CEF based on behind-the-meter generation and consumption versus grid consumption
Generation (REC / GO) Vintage	Document from REC provider	Tracking system ledger	Tracking system ledger	Not required	Tracking system ledger; Green-e certification	
REC / GO Serial Number(s)	Document from REC supplier/broker (not required if documentation states % coverage)	Tracking system	Tracking system	Not required	Tracking system; Green-e certification	N/A
Evidence of Retirement / Cancellation	Document from REC supplier/broker	Tracking system; Green-e certification	Tracking system; Green-e certification	Not required	Tracking system; Green-e certification	N/A

11

BSR®



BSR | Future of Internet Power: Documentation Requirements for Supplier-Procured Renewable Energy

among the facility's data center operations and colo clients' IT operations, e.g., everyone gets 40%, this documentation could be in the form of an attestation such as discussed in item 8 above. Contractual agreements with colo clients to procure renewable energy on their behalf may mean that those colo clients get a higher percentage of the renewable energy than other colo clients. For example, 100% of the renewable energy procured is allocated to colo clients with a contractual obligation, and 0% to those colo clients without a contractual obligation.

CONTRACTUAL CLAUSES FOR RENEWABLE ENERGY PROCUREMENT

These items address sit
electricity supplier, or a

» It is recommended
will be procured to
accordance with th
documentation tha
including, but not l
proof of REC own
supplied.

» An unbundled RE
that would likely be
(# of RECs), 3) vin
national), 7) Green
retirement. If the d
consumption by th
specific colo client
coverage can be d

PROOF OF RETIREMENT

Until RECs are retired, to prevent resale, a zero CEF cannot be applied. In the absence of a contractual agreement described in items 10 and 11 above, the following documentation about proof of retirement would be required.

» The colo vendor should provide proof of retirement of RECs (or equivalent). In addition, for a facility with less than 100% coverage, there may be a need for the colo vendor to show that RECs have been retired on behalf of specific colo clients, even if the renewable energy is evenly shared among the data center and all the colo clients.

Tracking systems provide a mechanism to show chain of custody and disposition of RECs. Demonstration of the final ownership and disposition (i.e., retired) of the RECs may be necessary.

8

"An unbundled REC contract generally comes with documentation from the REC supplier or broker that would likely be sufficient if it includes the following: 1) receiving facility, 2) specific MWh amount (# of RECs), 3) vintage, 4) coverage period, 5) renewable energy source/type 6) region (e.g., PJM, national), 7) **Green-e** certification or similar (proof of quality), 8) percent coverage and 9) proof of retirement."

CRS™

BSR®

GHG Emission Accounting, Renewable Energy Purchases, and Zero-Carbon Reporting: Issues and Considerations for the Colocation Data Center Industry

Scenario 4:
- Vendor accounts all emissions related to both the Data Center Equipment and the client's IT Equipment as scope 2
- Client also accounts all emissions related to their IT Equipment as scope 2

Scenario 5:
- Client accounts all emissions related to both their IT Equipment and the Data Center Equipment as scope 2
- Vendor also accounts all emissions related to the Data Center Equipment as scope 2

Scenario 6:
- Vendor accounts all emissions related to both the Data Center Equipment and the client's IT Equipment as scope 2
- Client also accounts all emissions related to both their IT Equipment and the Data Center Equipment as scope 2

Aside from these six accounting scenarios, there is also the possibility of under-counting scope 2 or double-counting of scope 3. This would occur if neither party counts the emissions as its scope 2, and/or both count the emissions as their scope 2. Under GHGP, either of these scenarios should be also avoided.

Current scope accountin
interpretations of the GH
throughout the colo indu
current GHGP, under th
3 emissions.

B. THE IMPLICA

Not only is double-count
terms when a renewable
zero-carbon attribute of
current protocol does no
accounting for the same
only the party in "posses
zerocarbon claim. Other
renewable energy purch
and attestations.

Additionally, double-counting of renewable energy purchases by multiple companies accounting for the same emissions as scope 2 is addressed by the North America CRS Green-e Program.[7] CRS states in its Summary of WRI Scope 2 Guidance that "Green-e Energy specifically restricts double claims on

[6] GHGP Corporate Standard Accounting, p33.
[8] Scope 2 Guidance, p40.
[7] CRS Green-E Program, https://resource-solutions.org/programs/green-e/.

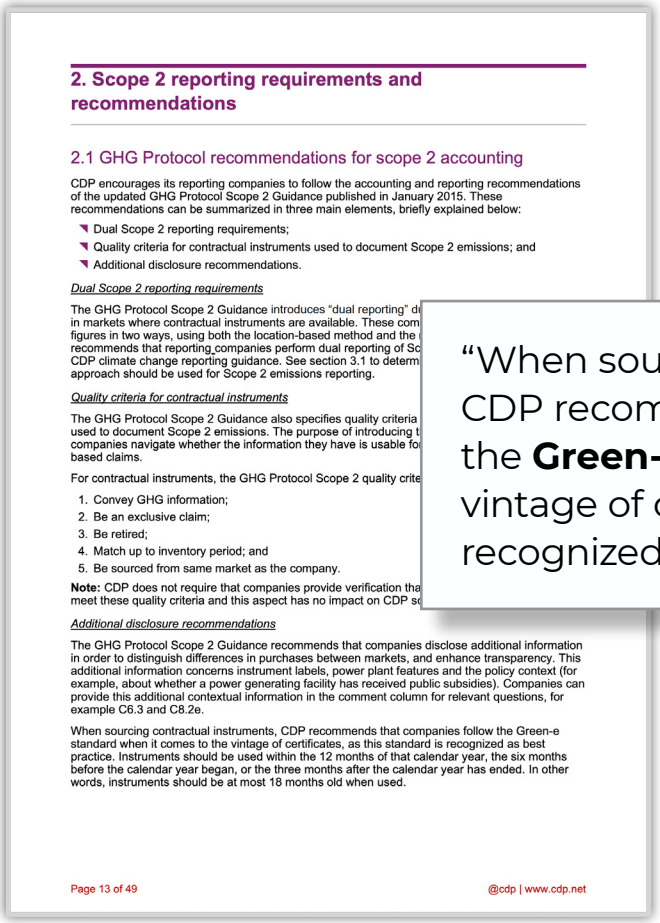
"Additionally, double-counting of renewable energy purchases by multiple companies accounting for the same emissions as scope 2 is addressed by the North America CRS **Green-e** Program.[7] CRS states in its Summary of WRI Scope 2 Guidance that "**Green-e** Energy specifically restricts double claims on renewable energy certificates (RECs).""

CDP

- CDP manages the global environmental reporting framework ¨Carbon Disclosure Project¨
- More than 8,400 corporations have reported their environmental performance through CDP
- Almost a fifth of global greenhouse gas emissions are reported through CDP
- It is the richest and most complete inventory of corporate and city emissions in the world, providing transparency and accountability to investors and decision makers

CDP Technical Note: Accounting of Scope 2 emissions

- The guide ¨CDP Technical Note: Accounting of Scope 2 emissions¨ aims to explain how to report carbon emissions associated with electricity consumption
- It highlights how certifications complement tracking systems, adding quality and certainty to market participants



2. Scope 2 reporting requirements and recommendations

2.1 GHG Protocol recommendations for scope 2 accounting

CDP encourages its reporting companies to follow the accounting and reporting recommendations of the updated GHG Protocol Scope 2 Guidance published in January 2015. These recommendations can be summarized in three main elements, briefly explained below:

- Dual Scope 2 reporting requirements;
- Quality criteria for contractual instruments used to document Scope 2 emissions; and
- Additional disclosure recommendations.

Dual Scope 2 reporting requirements

The GHG Protocol Scope 2 Guidance introduces "dual reporting" d
in markets where contractual instruments are available. These com
figures in two ways, using both the location-based method and the
recommends that reporting companies perform dual reporting of Sc
CDP climate change reporting guidance. See section 3.1 to determ
approach should be used for Scope 2 emissions reporting.

Quality criteria for contractual instruments

The GHG Protocol Scope 2 Guidance also specifies quality criteria
used to document Scope 2 emissions. The purpose of introducing t
companies navigate whether the information they have is usable fo
based claims.

For contractual instruments, the GHG Protocol Scope 2 quality crite

1. Convey GHG information;
2. Be an exclusive claim;
3. Be retired;
4. Match up to inventory period; and
5. Be sourced from same market as the company.

Note: CDP does not require that companies provide verification tha
meet these quality criteria and this aspect has no impact on CDP s

Additional disclosure recommendations

The GHG Protocol Scope 2 Guidance recommends that companies disclose additional information in order to distinguish differences in purchases between markets, and enhance transparency. This additional information concerns instrument labels, power plant features and the policy context (for example, about whether a power generating facility has received public subsidies). Companies can provide this additional contextual information in the comment column for relevant questions, for example C6.3 and C8.2e.

When sourcing contractual instruments, CDP recommends that companies follow the Green-e standard when it comes to the vintage of certificates, as this standard is recognized as best practice. Instruments should be used within the 12 months of that calendar year, the six months before the calendar year began, or the three months after the calendar year has ended. In other words, instruments should be at most 18 months old when used.

Page 13 of 49 @cdp | www.cdp.net

> "When sourcing contractual instruments, CDP recommends that companies follow the **Green-e** standard when it comes to the vintage of certificates, as this standard is recognized as best practice."

CDP
DISCLOSURE INSIGHT ACTION

- Properties should not be disaggregated, e.g. it is not allowed for one party to count for the GHG emission factor and another party to count for the fact that it is renewable in origin;
- There is an auditable chain of custody, that is, all information can be verified or audited by users in the system and the whole system is audited by external parties, guaranteeing that the link between generation, distribution and final consumption is effectively established and that there is a permanent retirement/cancelation mechanism within the system; and
- The information in the system can be used to avoid the double counting of attributes.

These systems have taken different forms to adhere to the different regulatory obstacles in each country or region where they are active. The three tracking systems described below, and their subsequent energy attribute certificates, are examples of reliable mechanisms for attribute delivery and individual consumer claims.

In addition to the issuance, tracking of properties and guarantee of the chain of custody, there can be certification schemes that will testify for the appropriate use of an instrument for a given purpose. These certification systems (or labels) can be based on appropriate tracking systems and add important assurances and quality criteria. An example of certification is the Green-e energy[9] program in the USA.

North American REC Tracking Sys

Electricity markets in the Unites Stat
variety of geographically-defined trac
meet the needs of state-level renew
and to facilitate electricity supply dis
entities in deregulated (competitive)
energy market participants. All of the
funded by governmental or quasi-go
regulatory compliance. North Americ
generation certificate tracking syster
generation(RECs). There are three a
States (NEPOOL GIS, NYGATS and
the systems in the US track generati
most states using tracking systems p
footprint.

European Energy Certificate Syst

Guarantee of Origin certificates are a
energy from renewable sources to th
system implementation is embedded in European law. This requirement however does not mandate the necessary technical systems to ensure that the GO is a reliable energy attribute certificate. National adoption of the European Energy Certificate System [12]or EECS Standard by national GO issuers ensures the standardization of consumer claims and the robustness of the energy attribute certificate. EECS-adherent countries represent a large majority of the European Member States. Within EECS countries, certificates can be electronically transferred to any other EECS country for subsequent cancellation and proof of electricity consumption in that area. Most European countries, and all EECS-adherent countries, mandate that consumer electricity usage claims be verified by GO cancelation. These countries ensure electricity supplier products are

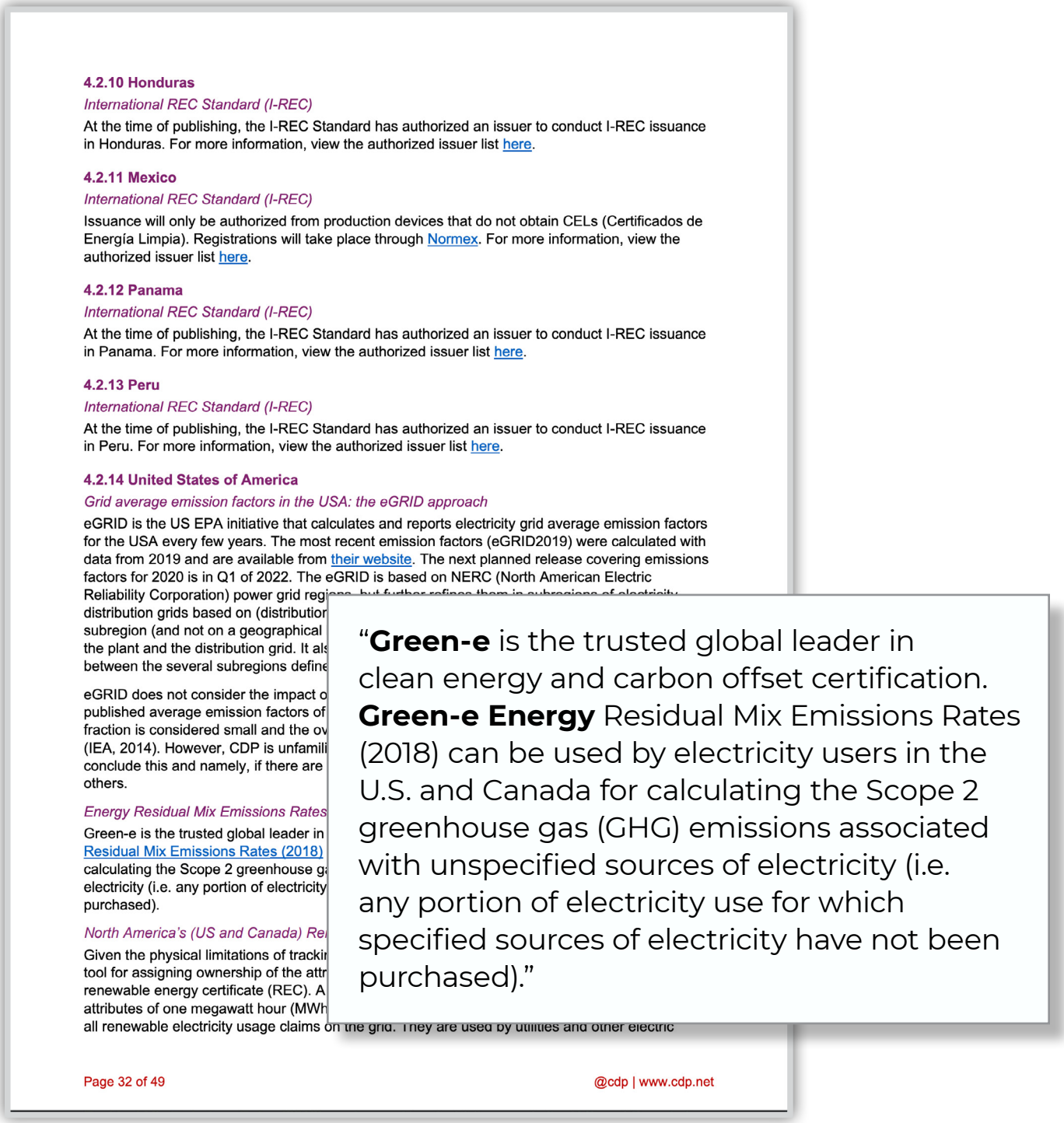
[9] https://www.green-e.org/programs/energy
[10] See a map of North American tracking systems here: https://resource-solutions.org/wp-content/uploads/2018/02/Tracking-System-Map.pdf
[11] The North American Renewables Registry is a privately developed and administered tracking system that offers certificate tracking to generators in regions where there is not a tracking system established by state agencies or a regional transmission or system operator.
[12] https://www.aib-net.org/eecs

Page 24 of 49 @cdp | www.cdp.net

> "In addition to the issuance, tracking of properties and guarantee of the chain of custody, there can be certification schemes that will testify for the appropriate use of an instrument for a given purpose. These certification systems (or labels) can be based on appropriate tracking systems and add important assurances and quality criteria. An example of certification is the **Green-e energy**[9] program in the USA."

CRS

CDP
DISCLOSURE INSIGHT ACTION



4.2.10 Honduras

International REC Standard (I-REC)

At the time of publishing, the I-REC Standard has authorized an issuer to conduct I-REC issuance in Honduras. For more information, view the authorized issuer list here.

4.2.11 Mexico

International REC Standard (I-REC)

Issuance will only be authorized from production devices that do not obtain CELs (Certificados de Energía Limpia). Registrations will take place through Normex. For more information, view the authorized issuer list here.

4.2.12 Panama

International REC Standard (I-REC)

At the time of publishing, the I-REC Standard has authorized an issuer to conduct I-REC issuance in Panama. For more information, view the authorized issuer list here.

4.2.13 Peru

International REC Standard (I-REC)

At the time of publishing, the I-REC Standard has authorized an issuer to conduct I-REC issuance in Peru. For more information, view the authorized issuer list here.

4.2.14 United States of America

Grid average emission factors in the USA: the eGRID approach

eGRID is the US EPA initiative that calculates and reports electricity grid average emission factors for the USA every few years. The most recent emission factors (eGRID2019) were calculated with data from 2019 and are available from their website. The next planned release covering emissions factors for 2020 is in Q1 of 2022. The eGRID is based on NERC (North American Electric Reliability Corporation) power grid regi

distribution grids based on (distributio

subregion (and not on a geographical

the plant and the distribution grid. It al

between the several subregions define

eGRID does not consider the impact o

published average emission factors of

fraction is considered small and the ov

(IEA, 2014). However, CDP is unfamili

conclude this and namely, if there are

others.

Energy Residual Mix Emissions Rates

Green-e is the trusted global leader in

Residual Mix Emissions Rates (2018)

calculating the Scope 2 greenhouse g

electricity (i.e. any portion of electricity

purchased).

North America's (US and Canada) Re

Given the physical limitations of trackin

tool for assigning ownership of the attr

renewable energy certificate (REC). A

attributes of one megawatt hour (MWh

all renewable electricity usage claims on the grid. They are used by utilities and other electric

Page 32 of 49 @cdp | www.cdp.net

"**Green-e** is the trusted global leader in clean energy and carbon offset certification. **Green-e Energy** Residual Mix Emissions Rates (2018) can be used by electricity users in the U.S. and Canada for calculating the Scope 2 greenhouse gas (GHG) emissions associated with unspecified sources of electricity (i.e. any portion of electricity use for which specified sources of electricity have not been purchased)."

CRS publishes annual Residual Mix Emissions Data for the U.S. each Spring (for the most recent complete data year). Data is publicly available at https://www.green-e.org/residual-mix

CRS

ENERGY-EFFICIENT CODES COALITION

Energy Efficient Codes Coalition (EECC)

- Dynamic efficiency gains in the nation's model energy code can mean billions of dollars in utility bill savings for home and commercial building owners/occupants, more stable electricity grids, reduced reliance on energy imports and fewer greenhouse gas emissions. After uniting leaders in the policy, business, construction, utility, low-income advocacy and environmental arenas to win a 30% efficiency boost in America's model energy code, the 2012 International Energy Conservation Code (IECC), the Energy Efficient Codes Coalition is now campaigning to put future IECCs on a path of continued progress

Energy Efficient Codes Coalition 2024 International Energy Conservation Code

- Green-e® referenced in EECC's 2024 IECC section C405.15.4 Renewable energy certificate purchase

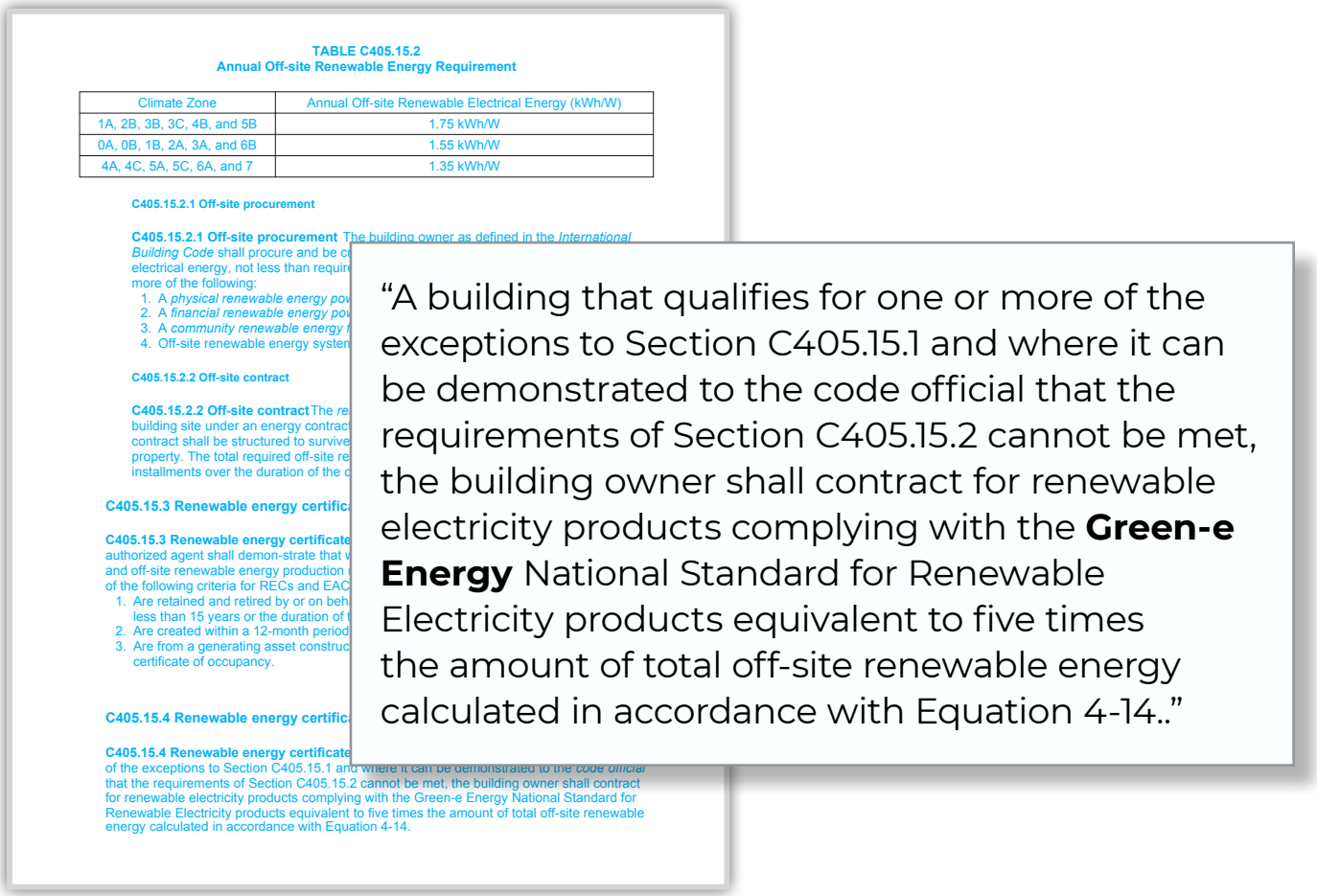


TABLE C405.15.2
Annual Off-site Renewable Energy Requirement

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

C405.15.2.1 Off-site procurement The building owner as defined in the *International Building Code* shall procure and be c… electrical energy, not less than requir… more of the following:

1. A *physical renewable energy pow…*
2. A *financial renewable energy pow…*
3. A *community renewable energy …*
4. Off-site renewable energy systen…

C405.15.2.2 Off-site contract

C405.15.2.2 Off-site contract The *re…* building site under an energy contract… contract shall be structured to survive… property. The total required off-site re… installments over the duration of the c…

C405.15.3 Renewable energy certific…

C405.15.3 Renewable energy certificate… authorized agent shall demon-strate that … and off-site renewable energy production … of the following criteria for RECs and EAC…

1. Are retained and retired by or on beh… less than 15 years or the duration of t…
2. Are created within a 12-month period…
3. Are from a generating asset construc… certificate of occupancy.

C405.15.4 Renewable energy certific…

C405.15.4 Renewable energy certificate… 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 off-site renewable energy calculated in accordance with Equation 4-14.

"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 off-site renewable energy calculated in accordance with Equation 4-14.."

GLOBAL ELECTRONICS COUNCIL
Sustainability for a Connected Future

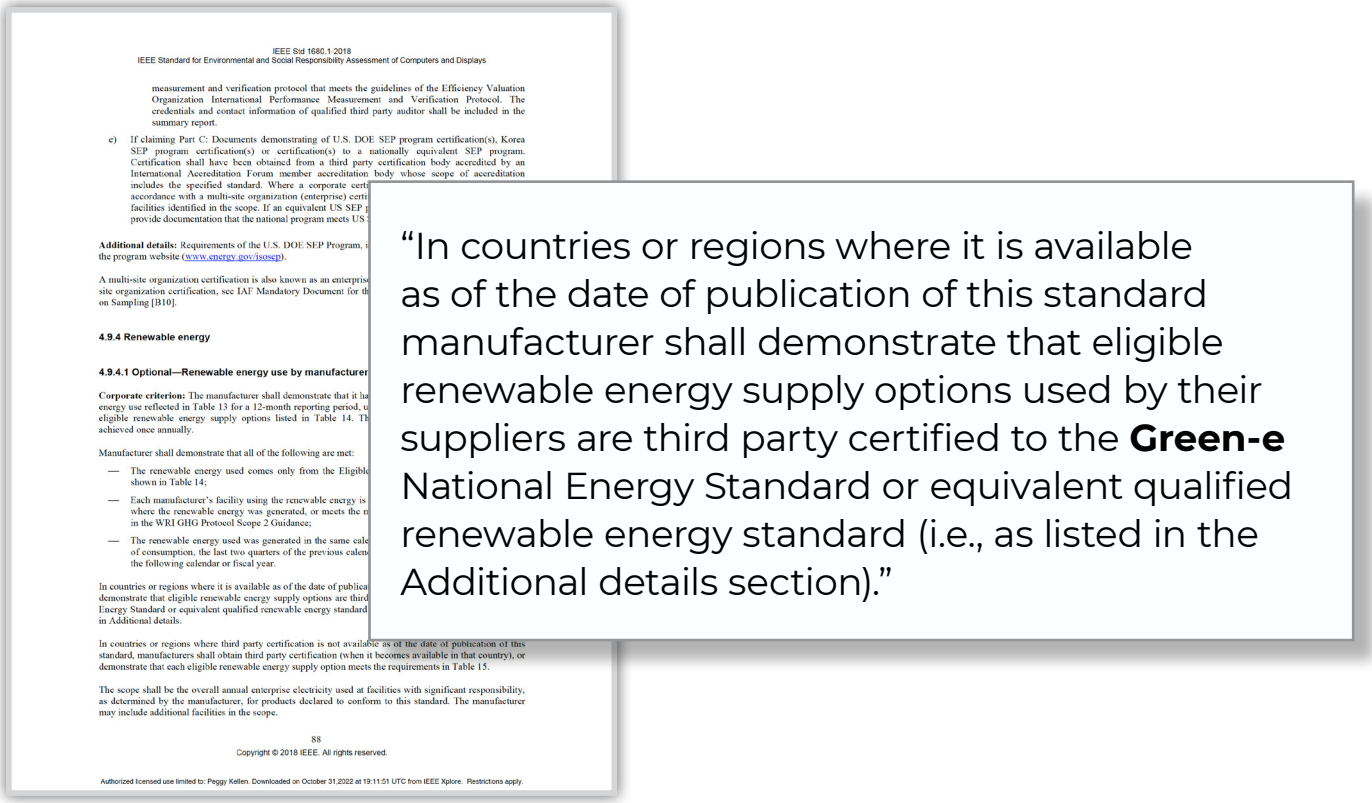
epeat™

Global Electronics Council

- The Global Electronics Council (GEC) is a nonprofit on a mission to increase the sustainability of how IT products are designed, manufactured and purchased
- Its EPEAT program, the leading global ecolabel for IT products, establishes leadership criteria that address a broad range of sustainability impacts, including climate change, and provides independent verification of manufacturers' claims

IEEE Standard for Environmental and Social Responsibility Assessment of Computers and Displays

- The EPEAT online Registry helps private and public large-scale purchasers around the world find more sustainable IT products
- EPEAT's Computers and Displays Category criteria requires manufacturers to demonstrate their renewable energy supply is third party certified to the Green-e® Renewable Energy Standard for Canada and the United States, or equivalent where not available



IEEE Std 1680.1-2018
IEEE Standard for Environmental and Social Responsibility Assessment of Computers and Displays

measurement and verification protocol that meets the guidelines of the Efficiency Valuation Organization International Performance Measurement and Verification Protocol. The credentials and contact information of qualified third party auditor shall be included in the summary report.

e) If claiming Part C: Documents demonstrating of U.S. DOE SEP program certification(s), Korea SEP program certification(s) or certification(s) to a nationally equivalent SEP program. Certification shall have been obtained from a third party certification body accredited by an International Accreditation Forum member accreditation body whose scope of accreditation includes the specified standard. Where a corporate certi
accordance with a multi-site organization (enterprise) certi
facilities identified in the scope. If an equivalent US SEP
provide documentation that the national program meets US

Additional details: Requirements of the U.S. DOE SEP Program,
the program website (www.energy.gov/isosep).

A multi-site organization certification is also known as an enterpris
site organization certification, see IAF Mandatory Document for th
on Sampling [B10].

4.9.4 Renewable energy

4.9.4.1 Optional—Renewable energy use by manufacturer

Corporate criterion: The manufacturer shall demonstrate that it ha
energy use reflected in Table 13 for a 12-month reporting period, u
eligible renewable energy supply options listed in Table 14. Th
achieved once annually.

Manufacturer shall demonstrate that all of the following are met:

— The renewable energy used comes only from the Eligibl
shown in Table 14;

— Each manufacturer's facility using the renewable energy is
where the renewable energy was generated, or meets the n
in the WRI GHG Protocol Scope 2 Guidance;

— The renewable energy used was generated in the same cale
of consumption, the last two quarters of the previous calen
the following calendar or fiscal year.

In countries or regions where it is available as of the date of publica
demonstrate that eligible renewable energy supply options are third
Energy Standard or equivalent qualified renewable energy standard
in Additional details.

In countries or regions where third party certification is not available as of the date of publication of this standard, manufacturers shall obtain third party certification (when it becomes available in that country), or demonstrate that each eligible renewable energy supply option meets the requirements in Table 15.

The scope shall be the overall annual enterprise electricity used at facilities with significant responsibility, as determined by the manufacturer, for products declared to conform to this standard. The manufacturer may include additional facilities in the scope.

88

"In countries or regions where it is available as of the date of publication of this standard manufacturer shall demonstrate that eligible renewable energy supply options used by their suppliers are third party certified to the **Green-e** National Energy Standard or equivalent qualified renewable energy standard (i.e., as listed in the Additional details section)."

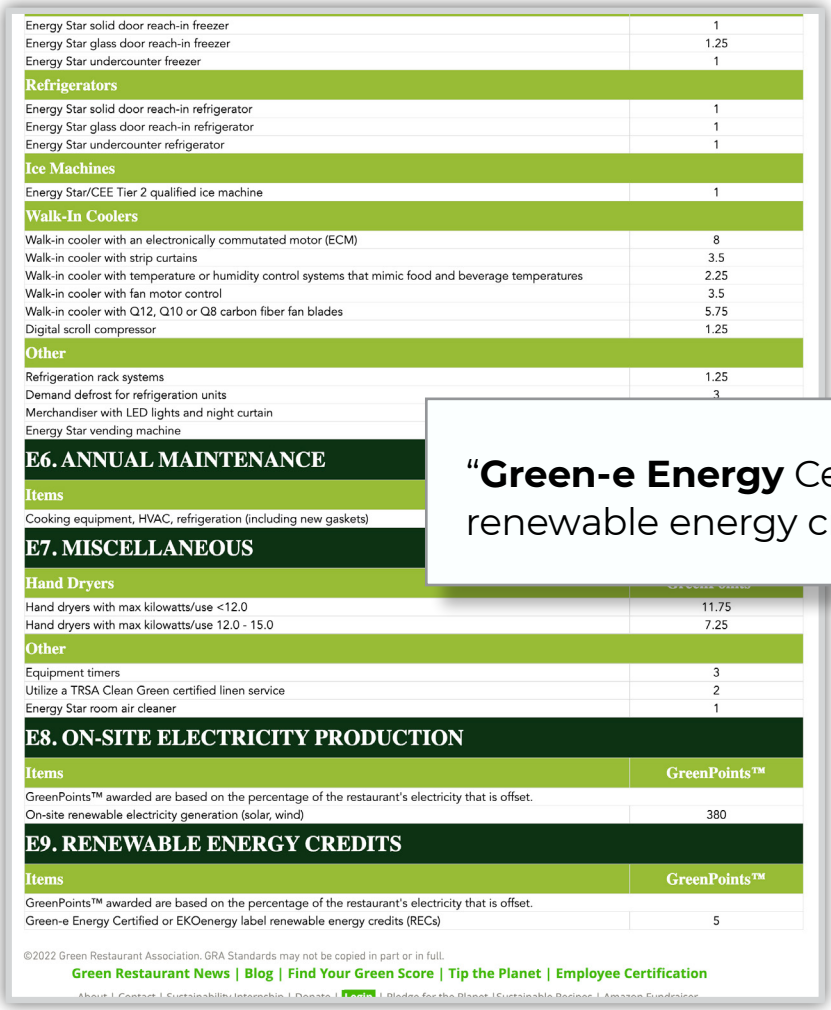
CRS™

The Green Restaurant Association

- The Green Restaurant Association is a non-profit that certifies the transparency of restaurants' green claims
- "GRA has made it accessible for thousands of restaurants to become more environmentally sustainable in Energy, Water, Waste, Food, Chemicals, Disposables, & Building"

GRA Energy Standard

- Green-e® referenced in GRA's Energy Standard
- Participants can earn GRA's GreenPoints™ by sourcing from Green-e® Energy certified sellers



Energy Star solid door reach-in freezer	1
Energy Star glass door reach-in freezer	1.25
Energy Star undercounter freezer	1
Refrigerators	
Energy Star solid door reach-in refrigerator	1
Energy Star glass door reach-in refrigerator	1
Energy Star undercounter refrigerator	1
Ice Machines	
Energy Star/CEE Tier 2 qualified ice machine	1
Walk-In Coolers	
Walk-in cooler with an electronically commutated motor (ECM)	8
Walk-in cooler with strip curtains	3.5
Walk-in cooler with temperature or humidity control systems that mimic food and beverage temperatures	2.25
Walk-in cooler with fan motor control	3.5
Walk-in cooler with Q12, Q10 or Q8 carbon fiber fan blades	5.75
Digital scroll compressor	1.25
Other	
Refrigeration rack systems	1.25
Demand defrost for refrigeration units	3
Merchandiser with LED lights and night curtain	
Energy Star vending machine	
E6. ANNUAL MAINTENANCE	
Items	
Cooking equipment, HVAC, refrigeration (including new gaskets)	
E7. MISCELLANEOUS	
Hand Dryers	
Hand dryers with max kilowatts/use <12.0	11.75
Hand dryers with max kilowatts/use 12.0 - 15.0	7.25
Other	
Equipment timers	3
Utilize a TRSA Clean Green certified linen service	2
Energy Star room air cleaner	1
E8. ON-SITE ELECTRICITY PRODUCTION	
Items	**GreenPoints™**
GreenPoints™ awarded are based on the percentage of the restaurant's electricity that is offset.	
On-site renewable electricity generation (solar, wind)	380
E9. RENEWABLE ENERGY CREDITS	
Items	**GreenPoints™**
GreenPoints™ awarded are based on the percentage of the restaurant's electricity that is offset.	
Green-e Energy Certified or EKOenergy label renewable energy credits (RECs)	5

Green Restaurant News | Blog | Find Your Green Score | Tip the Planet | Employee Certification

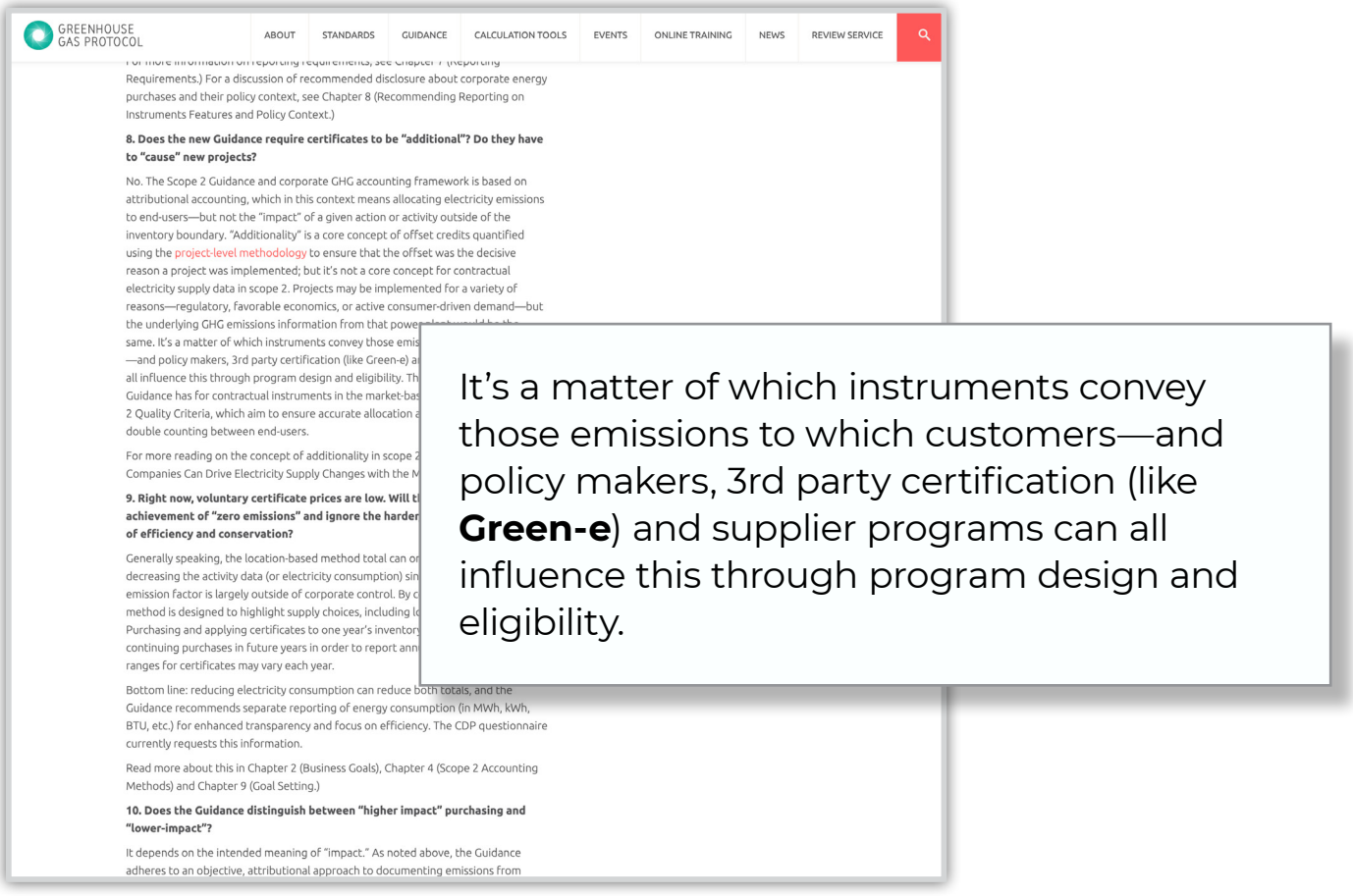
"**Green-e Energy** Certified or EKOenergy label renewable energy credits (RECs)"

Greenhouse Gas Protocol

- The GHG Protocol is the **global standard for corporate CO2 emissions accounting** and mitigation measures
- Determines how to present accurate, complete, and transparent reports regarding corporate emissions
- Convened by the **World Resources Institute (WRI)**, and the **World Business Council for Sustainable Development (WBCSD)**, a coalition of 170 international companies based in Geneva
- **9 out of 10 Fortune 500 companies** that have reported to the CDP use the GHG Protocol

Greenhouse Gas Protocol Standard

- Green-e® referenced in "Top Ten Questions about the Scope 2 Guidance"

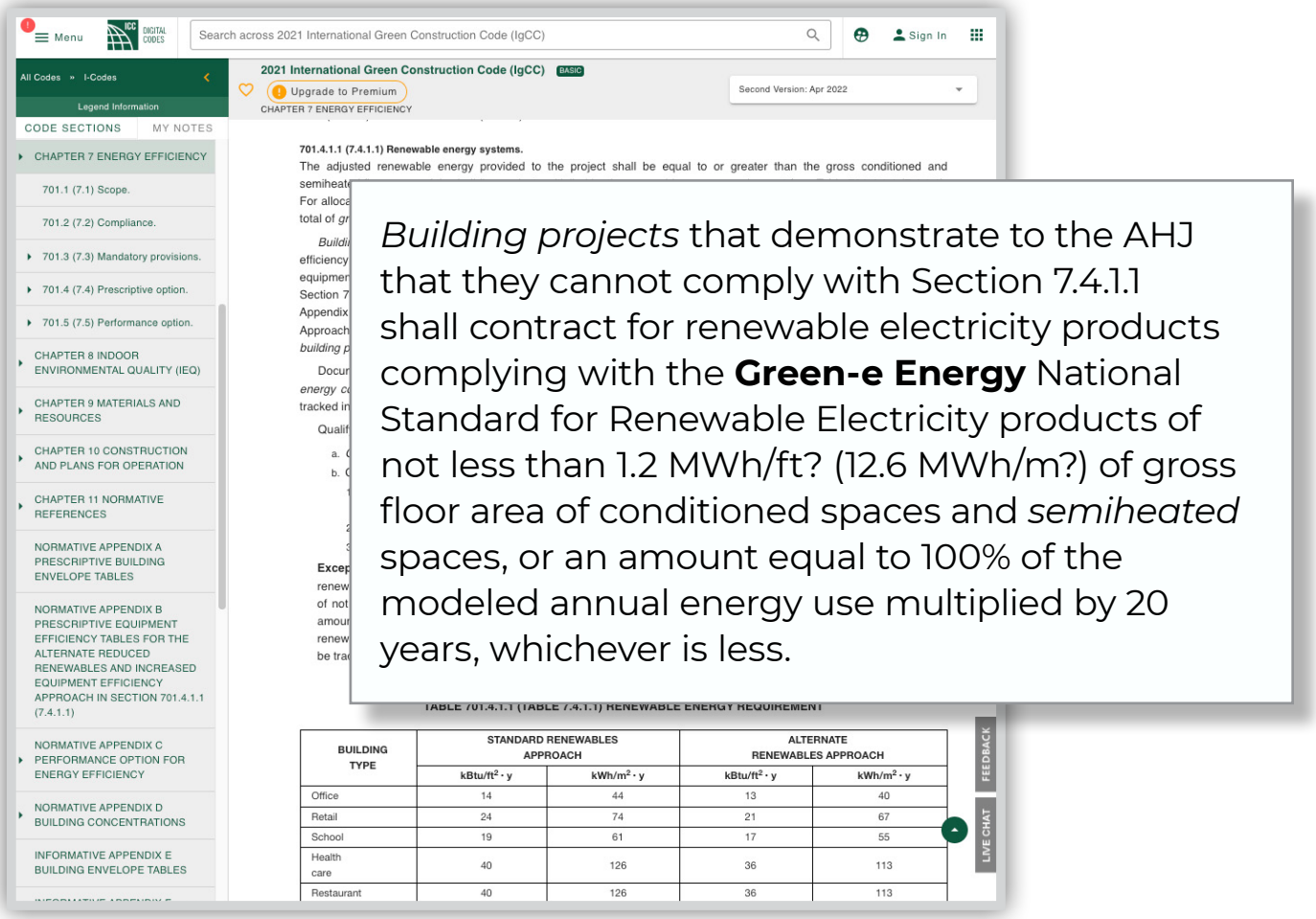


International Code Council (ICC)

- International Code Council (ICC) is a member-focused association dedicated to developing model codes and standards used in the design, build and compliance process to construct safe, sustainable, affordable and resilient structures
- Many U.S. communities and global markets choose the ICC-published International Codes® (I-Codes®) as their adopted codes, or work with ICC on a custom version of the codes

2021 International Green Construction Code

- The 2021 International Green Construction Code references the Green-e® Energy Standard



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? (12.6 MWh/m?) 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.

INTERNATIONAL LIVING FUTURE INSTITUTE℠

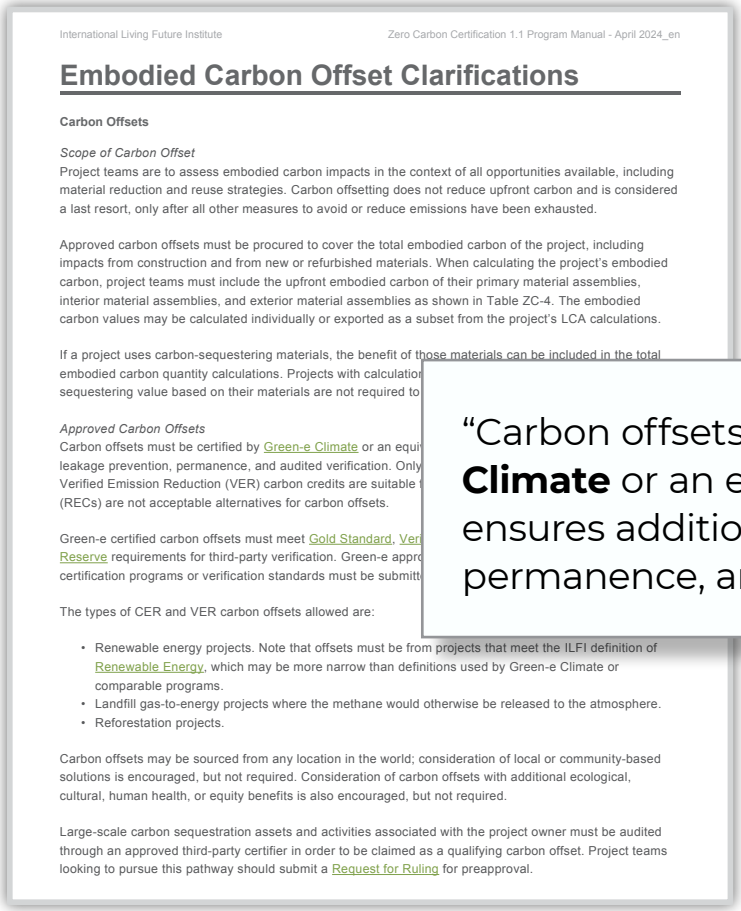
LIVING BUILDING CHALLENGE

International Living Future Institute And Their Living Building Challenge

- International Living Future Institute is is a non-profit organization offering green building and infrastructure solutions with a mission to lead and support the transformation toward communities that are socially just, culturally rich, and ecologically restorative.
- The Institute administers the Living Building Challenge, a building performance standard that puts itself forward as a philosophy, an advocacy tool, and a certification program.

International Living Future Institute Zero Carbon Certification

- Green-e® referenced in International Living Future Institute's "Zero Carbon Certification" Standard
- In purchasing carbon offsets, Green-e® Climate certification (or an equivalent program) is required



International Living Future Institute — Zero Carbon Certification 1.1 Program Manual - April 2024_en

Embodied Carbon Offset Clarifications

Carbon Offsets

Scope of Carbon Offset

Project teams are to assess embodied carbon impacts in the context of all opportunities available, including material reduction and reuse strategies. Carbon offsetting does not reduce upfront carbon and is considered a last resort, only after all other measures to avoid or reduce emissions have been exhausted.

Approved carbon offsets must be procured to cover the total embodied carbon of the project, including impacts from construction and from new or refurbished materials. When calculating the project's embodied carbon, project teams must include the upfront embodied carbon of their primary material assemblies, interior material assemblies, and exterior material assemblies as shown in Table ZC-4. The embodied carbon values may be calculated individually or exported as a subset from the project's LCA calculations.

If a project uses carbon-sequestering materials, the benefit of those materials can be included in the total embodied carbon quantity calculations. Projects with calculatio
sequestering value based on their materials are not required to

Approved Carbon Offsets

Carbon offsets must be certified by Green-e Climate or an equi
leakage prevention, permanence, and audited verification. Only
Verified Emission Reduction (VER) carbon credits are suitable
(RECs) are not acceptable alternatives for carbon offsets.

Green-e certified carbon offsets must meet Gold Standard, Ver
Reserve requirements for third-party verification. Green-e appro
certification programs or verification standards must be submitt

The types of CER and VER carbon offsets allowed are:

- Renewable energy projects. Note that offsets must be from projects that meet the ILFI definition of Renewable Energy, which may be more narrow than definitions used by Green-e Climate or comparable programs.
- Landfill gas-to-energy projects where the methane would otherwise be released to the atmosphere.
- Reforestation projects.

Carbon offsets may be sourced from any location in the world; consideration of local or community-based solutions is encouraged, but not required. Consideration of carbon offsets with additional ecological, cultural, human health, or equity benefits is also encouraged, but not required.

Large-scale carbon sequestration assets and activities associated with the project owner must be audited through an approved third-party certifier in order to be claimed as a qualifying carbon offset. Project teams looking to pursue this pathway should submit a Request for Ruling for preapproval.

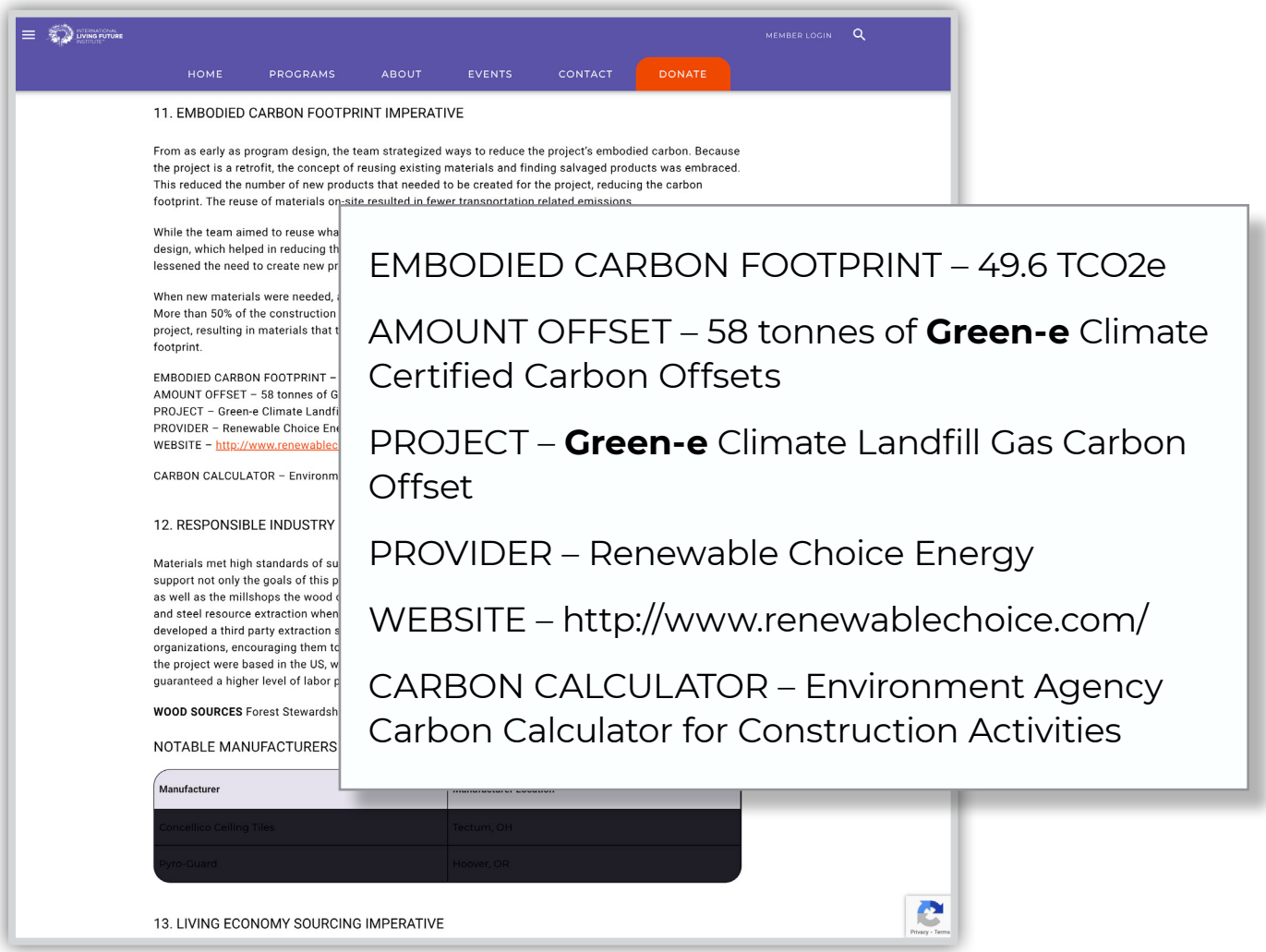
"Carbon offsets must be certified by **Green-e Climate** or an equivalent program that ensures additionality, leakage prevention, permanence, and audited verification."

CRS™

LIVING BUILDING CHALLENGE

International Living Future Institute Example of Building Certification

- Green-e® referenced in International Living Future Institute's building certification of the NRDC's San Francisco office
- NRDC purchased Green-e® Climate certified carbon offsets



RE100

About RE100

- RE100 is the global initiative that brings together more than 350 corporations committed to 100% renewable electricity
- Members are present in 175 different markets
- Their demand surpasses 390 TWh per year

RE100

RE100 Technical Criteria

- The document "RE100 Technical Criteria" defines valid purchases of renewable energy
- Criteria are established by the RE100 Technical Advisory Group, in consultation with member companies, and with the approval of the RE100 Board of Directors
- To participate in the program, an independent verification is required, and in accordance with an available Standard

- **Claims:** In order to claim the renewable attri
owned by third parties, certificates need not
consumed electricity is measured by meter
also retained or retired.

4. Direct procurement from offsite gric

- **Definition:** In a direct procurement contract,
an agreement is signed between a purchase
The contract ensures the purchase of electri
attributes. In general, there are two types of
price for electricity (a contract for differences
service provider, and the attributes of the ge
the buyer to schedule for the delivery of elec
attribute certificates may be arbitraged acros
for claims outlined below. Community or sha
procurement from offsite grid-connected gen
- **Claims:** Certificates issued by the specific p
retired on the company's behalf. In the case
associated with the certificates purchased, o
The company cannot claim the attributes of
party. In countries where certificates and/or tracking systems don't exist, transfer of attributes shall be specified in a contract or via an alternative system that ensures claims are unique and there is no double counting of attributes.

5. Contract with suppliers (green electricity products)

- **Definition:** In a contract for electricity procu
entity) matches the electricity consumed by
electricity produced or purchased from a var
projects. Contracts can be structured in diffe
electricity offered to the consumer. Certain c
(or tariffs).
- **Claims:** The supplier shall purchase and reti
claims. In countries where no tracking syste
contract or via an alternative system that ens
attributes. Retail programs or products shall
to ensure the exclusive ownership and accur
program for renewable electricity products th

6. Unbundled energy attribute certifica

- **Definition:** Companies can claim the enviro
electricity attribute certificates issued by ren
boundary as the claimant. Companies may p
Guarantees of Origin (Europe) and I-RECs (
electricity consumption from non-renewable
- **Claims:** The company shall retire the certificates it purchases or the certificates shall be retired on behalf of the company. Retail products shall be certified or sales shall otherwise be verified by a third party to ensure the accurate and exclusive delivery of certificates as well as an exclusive claim on the attributes (e.g. the Green-e Energy certification program for REC products the U.S. and Canada). Where certificates are

RE100 CLIMATE GROUP | CDP

RE100 Technical Criteria 4

"Retail programs or products shall be certified or sales shall otherwise be verified by a third party to ensure the exclusive ownership and accurate delivery of attributes (e.g. the **Green-e Energy** certification program for renewable electricity products the U.S. and Canada)."

"Retail products shall be certified or sales shall otherwise be verified by a third party to ensure the accurate and exclusive delivery of certificates as well as an exclusive claim on the attributes (e.g. the **Green-e Energy** certification program for REC products the U.S. and Canada)."

RE100

Section Five: Requirements for procurement

1 Credibility of claims

A credible claim to use of renewable electricity must be based on:

- Credible generation data[5];
- Attribute aggregation[5];
- Exclusive ownership (no double counting) of attributes[5];
- Exclusive claims (no double claiming) on attributes[5];
- Geographic market limitations of claims[5]; and
- Vintage limitations of claims. The period of generation used to claim use of renewable electricity must be reasonably close in time to the period over which a claim to use of renewable electricity is made. RE100 does not define 'reasonably close'[5].

2 Impact in

RE100's aim is f
grids. Corporate
the actions they
through the sign
voluntarily procu

2.1 Impactful

RE100 holds that se
project-specific cont
carbon grids. Where
make a preference
purchases.

Additional, voluntary
EACs are from rece
Green-e ®, EKOene
credibility of any pro

RE100 recognizes that impactful procurement is not always possible in all markets. Corporate buyers should engage with suppliers and policymakers to remove barriers to impactful procurement and otherwise procure renewable electricity with the highest impact possible where they operate.

> "Additional, voluntary labels can be sought for EACs which might, for example, guarantee that the EACs are from recently commissioned projects. A non-exhaustive list of these labels includes the **Green-e®**, EKOenergy®, and Gold Standard® labels. They can strengthen the impact and credibility of any procurement type that conveys EACs."

[5] Appendix A discusses each of these features more broadly. Appendix B outlines RE100's precise market boundary definitions. The RE100 credible claims paper also exists as a standalone document corporate buyers can use as an aid in their procurement and in making claims.

RE100 CLIMATE GROUP | CDP

RE100 TECHNICAL CRITERIA 14

CRS

RE100

RE100 FAQ

- The FAQ of the RE100 website references the Green-e® Standard when addressing vintage limitations for certification

- REC (US and Canada)
- GOs or REGO (Europe)
- T-REC (Taiwan)
- J-Credit, NFC, GEC(Japan)
- I-REC (International)
- TIGR (International)
- GEC (China)
- NZREC (New Zealand)

38. How can I get RE100 to endorse a particular REC/EAC system?

We have limited resources to verify EAC systems and focus them on government systems where we have significant member demand. If you want to procure an EAC that has not been verified by RE100 please check it against the criteria in RE100's guidance on making credible claims to use of renewable electricity.

39. Is there a vintage limitation for certificates?

Yes. To make a credible RE claim, the vintage of the energy attribute certificates must be "reasonably close" to the reporting year of the electricity consumption to which it is applied. There is however no official consensus on what is "reasonable" in this case, and it may vary between markets. RE100 does not have a specific vintage limitation.

Companies can refer to certification standards, claim verification and recognition programs, and/or GHG inventory reporting systems to ensure that the vintage of generation does not occur too far in advance or after consumption.

The Green-e® standard has a 21-month vintage requirement which RE100 recommends as a reasonable practice.

40. Can Energy Attri
generated consu

In almost all cases, no. RE100
are in Scope 1 or Scope 2 of y
and, if off-site, whether the ele
transfer. These factors determi
sourced from CHP which is usi

EACs are Scope 2 instruments conveying the environmental attributes of grid-delivered electricity. They cannot be used to decarbonize Scope 1 emissions or electricity that is not delivered through the shared electricity grid (i.e., through a direct line).

RE100 does not support decarbonizing electricity from on-site fossil fuels through any approach which does not directly or contractually reduce those fossil fuel emissions, regardless of the connection type and which Scope the emissions from the fossil fuels are in for your organization. A company with on-site CHP is choosing to have fossil fuel generation located on-site for its use, which is not a strategy that RE100 can support as a 100% renewable electricity initiative.

To decarbonize the electricity generated by an on-site CHP plant or an off-site one to which you have a direct line, regardless of which Scope the emissions are in, you must do one of the following:

- switch to a renewable energy system,

RE100 CLIMATE GROUP | CDP

RE100 Technical FAQs 12

"The **Green-e®** Standard has a 21-month vintage requirement which RE100 recommends as a reasonable practice."

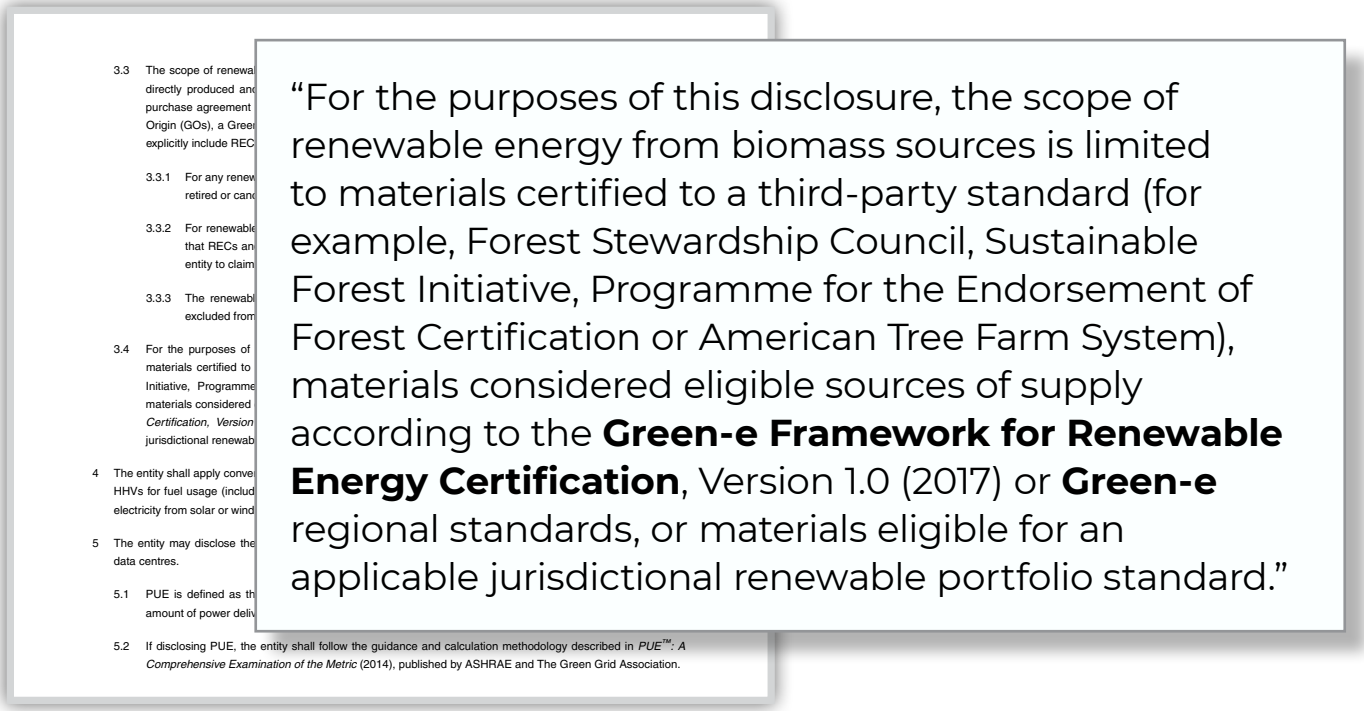
Sustainability Accounting Standards Board (SASB)

- "SASB Standards guide the disclosure of financially material sustainability information by companies to their investors. Available for 77 industries, the Standards identify the subset of environmental, social, and governance issues most relevant to financial performance in each industry"

Telecommunication Services Sustainability Accounting Standard

- Green-e is referenced in 37 Sustainability Accounting Standards Board (SASB) industry standards. These standards include:

  Building Products & Furnishings, E-commerce, Multiline and Specialty Retailers & Distributors, Construction Materials, Iron & Steel Producers, Metals & Mining, Oil & Gas – Exploration & Production, Agricultural Products, Alcoholic Beverages, Food Retailers & Distributors, Meat, Poultry & Dairy, Non-Alcoholic Beverages, Processed Foods, Restaurants, Drug Retailers, Health Care Delivery, Real Estate, Water Utilities & Services, Fuel Cells & Industrial Batteries, Pulp & Paper Products, Solar Technology & Project Developers, Aerospace & Defence, Chemicals, Containers & Packaging, Electrical & Electronic Equipment, Industrial Machinery & Goods, Casinos & Gaming, Hotels & Lodging, Leisure Facilities, Internet Media & Services, Semiconductors, Software & IT Services, Telecommunication Services, Auto Parts, Cruise Lines, Marine Transportation



3.3 The scope of renewa
directly produced an
purchase agreement
Origin (GOs), a Gree
explicitly include REC

3.3.1 For any renew
retired or can

3.3.2 For renewable
that RECs an
entity to claim

3.3.3 The renewabl
excluded from

3.4 For the purposes of
materials certified to
Initiative, Programme
materials considered
Certification, Version
jurisdictional renewab

4 The entity shall apply conve
HHVs for fuel usage (includ
electricity from solar or wind

5 The entity may disclose the
data centres.

5.1 PUE is defined as th
amount of power deliv

5.2 If disclosing PUE, the entity shall follow the guidance and calculation methodology described in *PUE™: A Comprehensive Examination of the Metric* (2014), published by ASHRAE and The Green Grid Association.

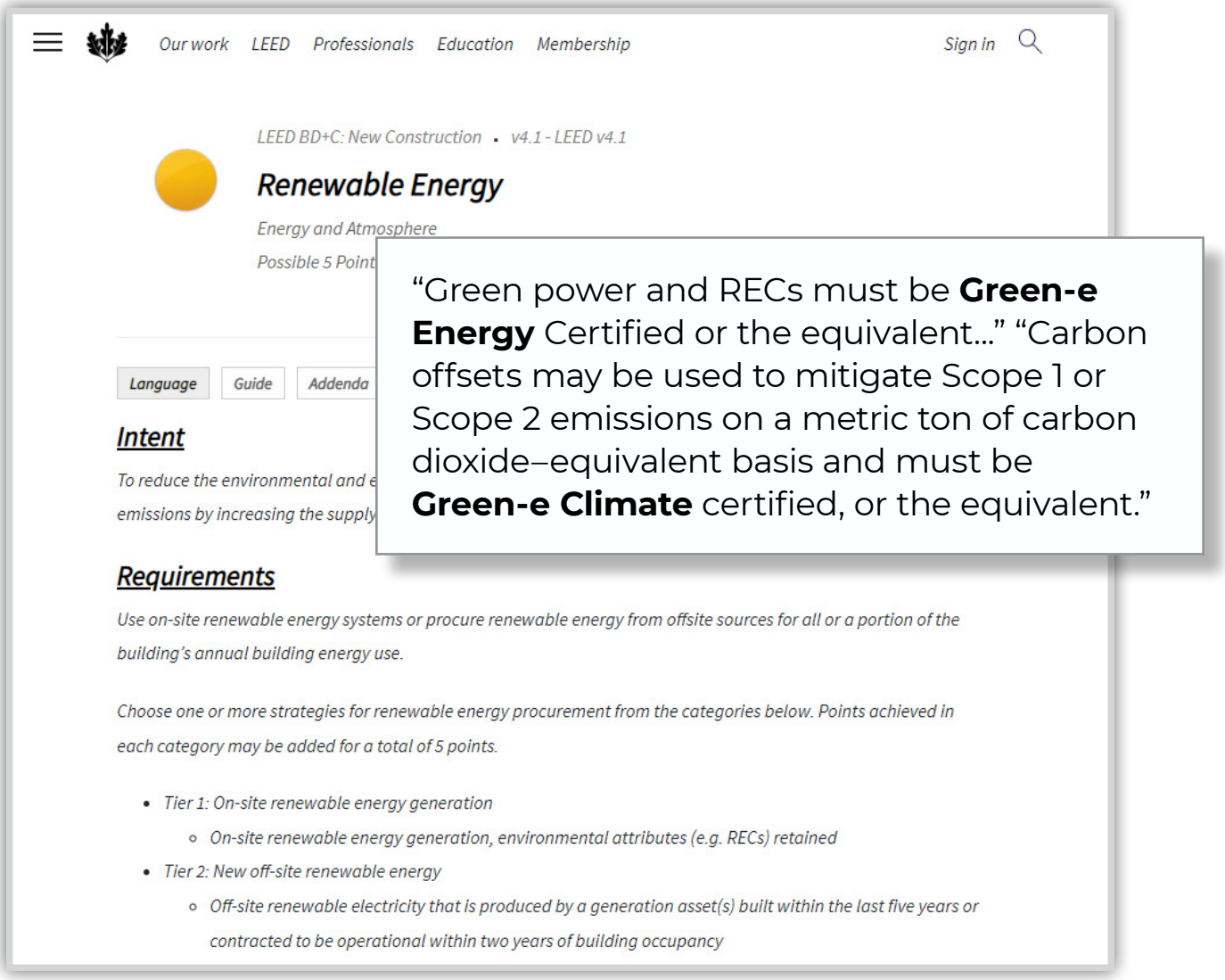
"For the purposes of this disclosure, the scope of renewable energy from biomass sources is limited to materials certified to a third-party standard (for example, Forest Stewardship Council, Sustainable Forest Initiative, Programme for the Endorsement of Forest Certification or American Tree Farm System), materials considered eligible sources of supply according to the **Green-e Framework for Renewable Energy Certification**, Version 1.0 (2017) or **Green-e** regional standards, or materials eligible for an applicable jurisdictional renewable portfolio standard."

U.S. Green Building Council (USGBC) LEED

- The U.S. Green Building Council (USGBC) certifies over 100,000 buildings through LEED – the building design, operation, and construction certification program
- LEED is the world's leading certification for sustainable buildings

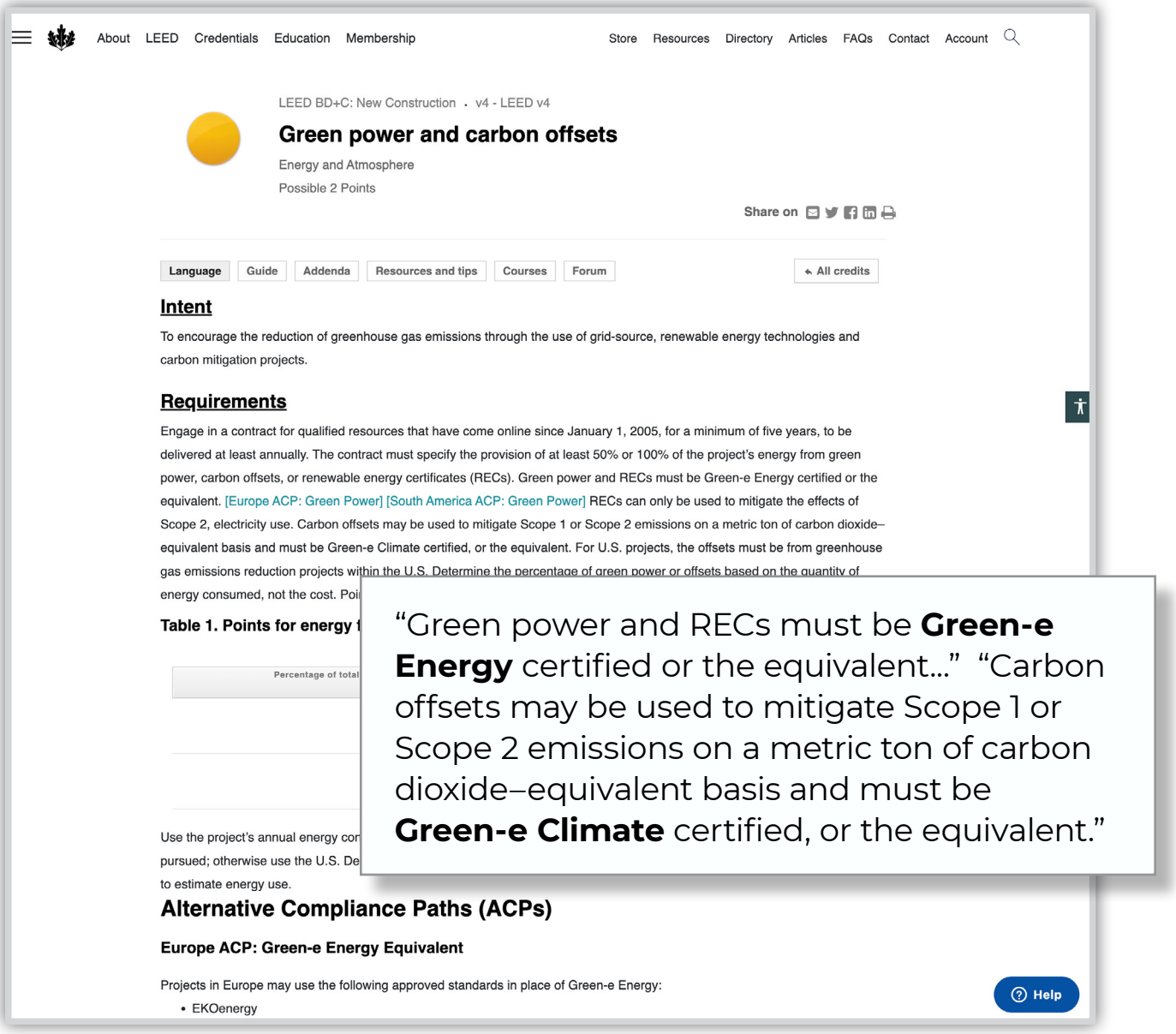
LEED v.4.1 Renewable Energy

- Green-e® Energy is referenced in LEED v4.1's "Renewable Energy" credit
- Green-e® Energy certification is required for all purchases from generators 6-15 years old, and for certain REC purchases from generators up to 5 years old.



LEED v.4 Green Power and Carbon Offsets

- Green-e® referenced in USGBC's "Green power and carbon offsets" credit in LEED v.4
- Sourcing of Green-e® Energy certified renewable energy and Green-e® Climate certified offsets is required



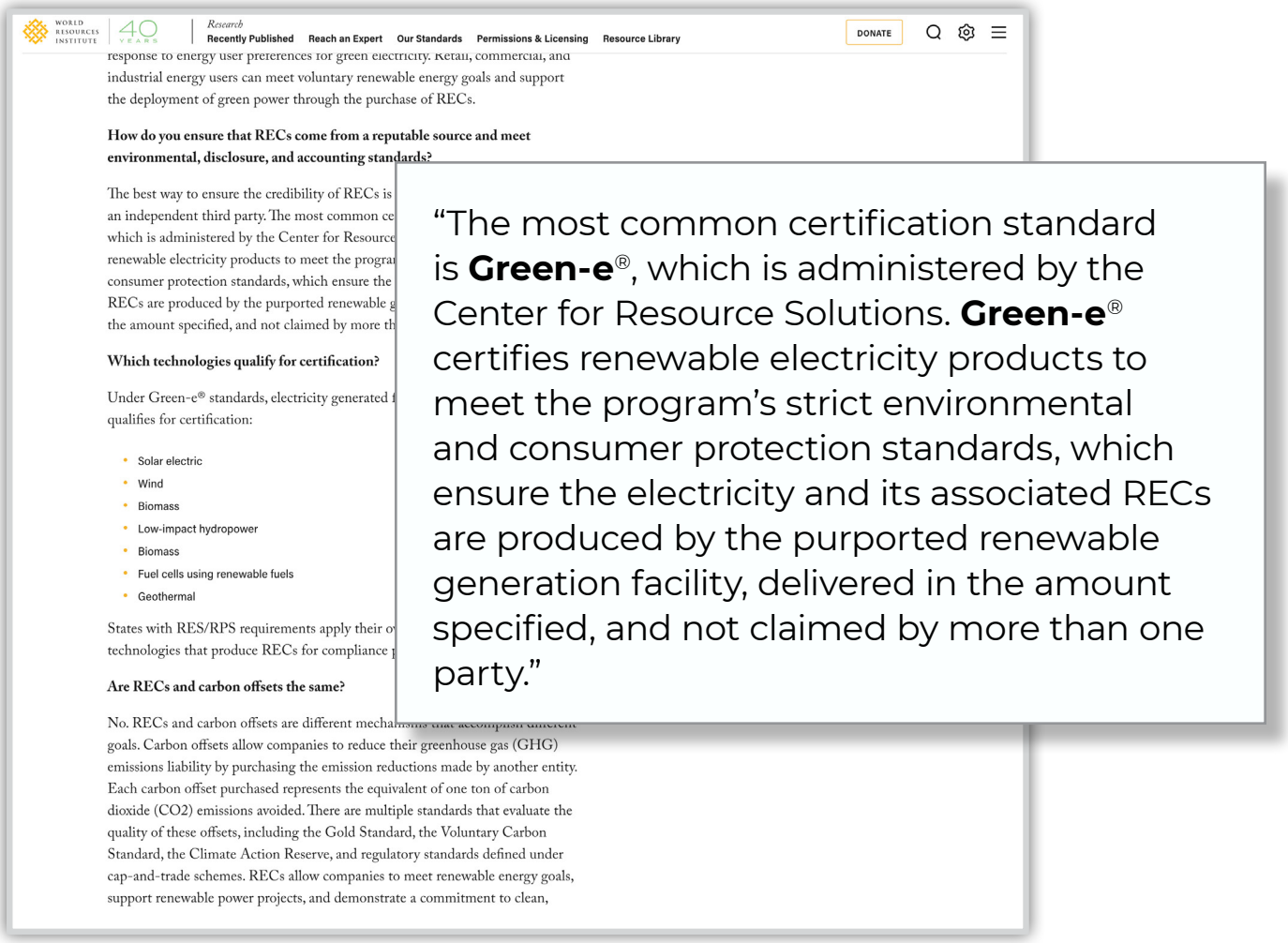
WORLD RESOURCES INSTITUTE

World Resources Institute (WRI)

- "WRI is a global nonprofit organization that works with leaders in government, business and civil society to research, design, and carry out practical solutions that simultaneously improve people's lives and ensure nature can thrive"
- 12 international offices
- Partners with 50 countries

WRI FAQ on Renewable Energy Certificates (RECs)

- In response to a question about sourcing RECs from a reputable source, WRI references Green-e®



WORLD RESOURCES INSTITUTE

WRI Guide to Purchasing Green Power

- In WRI's "Guide to Purchasing Green Power", Green-e® is introduced and referenced as a certification program that identifies green power.

Chapter 2

The Definition of Green Power

Renewable energy is derived from natural sources that replenish themselves over short periods of time. These resources include the sun, wind, moving water, organic plant and waste material (biomass), and the earth's heat (geothermal). This renewable energy can be used to generate electricity as well as for other applications. For example, biomass may be used as boiler fuel to generate steam heat; solar energy may be used to heat water or for passive space heating; and landfill methane gas may be used for heating or cooking.

Although the environmental impacts of renewable energy are generally minimal, these power sources still do have some effect on the environment. For example, biomass resources are converted to electricity through combustion, which produces some air pollutants. Hydroelectric dams can flood the land surrounding land and impede the passage of fish. Compared to conventional power, however, renewable power generation avoids, or at least significantly reduces, the adverse environmental impacts of conventional electricity generation.

The term *green power* is used in a number of different ways. In the broadest sense, green power refers to environmentally preferable energy and energy technologies, both electric and thermal. This definition of green power includes many options, from solar photovoltaic systems to wind turbines to biofuels for automobiles.

Although renewable resources do more than generate electricity, green power is most commonly used in a marketing, sense to refer specifically to *electricity* from renewable resources. In the context of the *Guide to Purchasing Green Power*, the term *green power* refers to electricity products that include significant proportions of electricity generated from energy resources that are both renewable and environmentally preferable.

In the *Guide*, green power includes the following three products:

- "Renewable electricity" is generated using renewable energy resources and is delivered through the utility

4 The Definition of Green Power

To help consumers more easily identify green power products, the "**Green-e**" Renewable Energy Certification Program is working to build market-based, consensus definitions for environmentally-preferable renewable electricity and renewable energy certificates. The **Green-e** program, administered by the non-profit Center for Resource Solutions (CRS), certifies and verifies renewable electricity products in competitive power markets, as well as utility green pricing programs and in national markets for RECs. Further details about **Green-e** certification are available from the **Green-e** Web sites listed in Chapter 10.

CRS

Green-e® U.S./Canada Citations

CAGBC | Canada Green Building Council

MeetGreen®

NREL

NRDC
NATURAL RESOURCES DEFENSE COUNCIL

SUSTAINABLE PURCHASING LEADERSHIP COUNCIL

EPA
United States Environmental Protection Agency

CAGBC | Canada Green Building Council

Canada Green Building Council (CAGBC)

- "The Canada Green Building Council supports the building sector's transition to buildings that are better for people and the planet"
- CAGBC comprises of 1,100 corporate members and over 14,000 individual members
- "CAGBC provides the products and services the building sector needs to construct and manage buildings that are easier on resources, healthier for people, and more cost-effective"

Canada Green Building Council's Zero Building Design Standard

- Green-e® referenced in CAGBC's June 2022 Issue of Zero Carbon Building Design Standard

29 CAGBC | Zero Carbon Building – Design Standard Version 3 | June 2022

Onsite power generation s
generation equipment to t

OFFSITE

Offsite **renewable energy**
metering is an arrangeme
net-metered against (dedu
systems installed on adjac

GREEN POWER PR

Green power products i
kilowatt-hour of procured
of the zero-carbon balanc

To qualify under the ZCB-Design Standard **green power products** can be generated anywhere in Canada, however project teams are encouraged to consider local options first. **Green power products** must be generated from:

- Solar energy;
- Wind;
- Water (including low-i
- Qualifying biogas (see
- Qualifying biomass (s
- Geothermal energy.

Green power products p
ZCB-Design program's re
offset their operational en
requirements of the ZCB-

Not all forms of **green pov**
procurement of **green pov**
have been installed. The f
available and can explore the highest quality options first.

1. Power Purchase Agre
environmental attrib
for at least fifteen yea
used at the company-
Canada. All **PPAs** mu
II - Requirements for
from **green power** fa
2. Utility Green Power: U
associated **environm**
green power purchas

"All PPAs must be certified by either ECOLOGO or **Green-e**® Energy, or meet the requirements outlined in Appendix II - Requirements for Bundled Green Power Products that are not ECOLOGO or **Green-e**® Energy Certified. All power must be from green power facilities in Canada."

"All utility green power must be certified by either ECOLOGO or **Green-e**® Energy, or meet the requirements outlined in Appendix II - Requirements for Bundled Green Power Products that are not ECOLOGO or **Green-e**® Energy Certified."

"All RECs must be certified by ECOLOGO or **Green-e**® Energy and generated from green power facilities located in Canada."

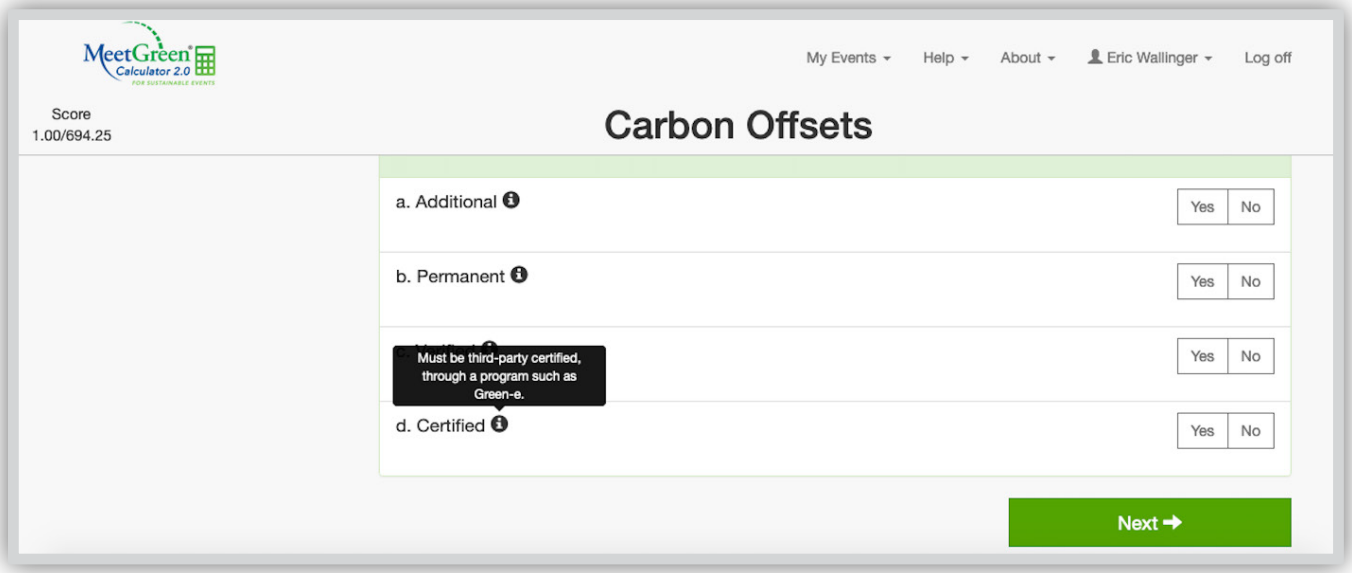
CRS

MeetGreen®

- MeetGreen® works with progressive global organizations to integrate sustainable practices and produce conferences and events rooted in sustainability
- With nearly 30 years of direct assessment experience in the built environment, MeetGreen assembled and refined one of the largest repositories of data on the planet regarding the convening of people, nuances of their choices and supply chains, as well as their associated wide-ranging environmental impacts

MeetGreen® Event Calculator

- In the MeetGreen® Event Calculator, Green-e® is referenced as an example of an acceptable third-party certification required for any carbon offset procured



Note: *This quote was obtained from a source that requires login access.*

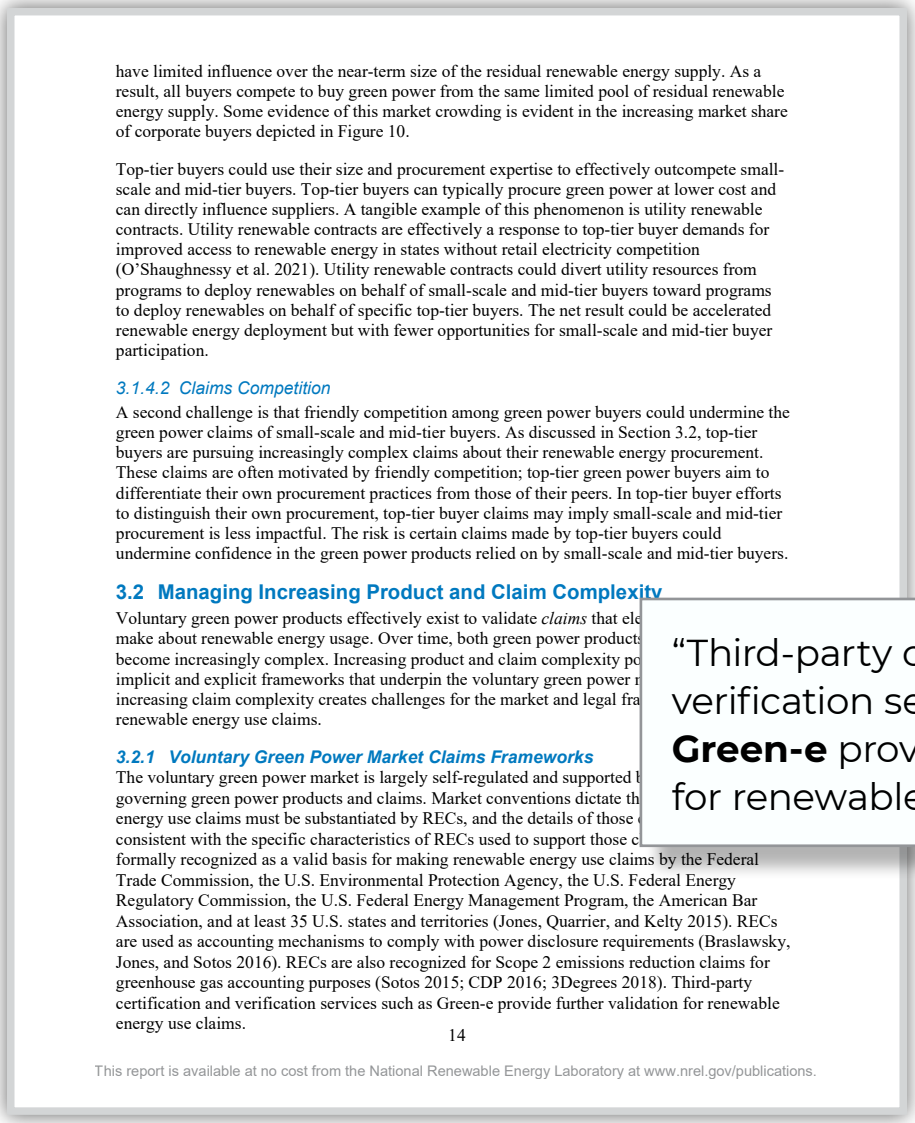
> "Must be third-party certified, through a program such as **Green-e**"

National Renewable Energy Laboratory

- "The National Renewable Energy Laboratory (NREL) is transforming energy through research, development, commercialization, and deployment of renewable energy and energy efficiency technologies."
- "NREL has decades of focused leadership in clean energy research, development, and deployment."

Status and Trends in the U.S. Voluntary Green Power Market (2021 Data)

- Green-e® recommended as a reliable third-party certification and verification service by NREL.



have limited influence over the near-term size of the residual renewable energy supply. As a result, all buyers compete to buy green power from the same limited pool of residual renewable energy supply. Some evidence of this market crowding is evident in the increasing market share of corporate buyers depicted in Figure 10.

Top-tier buyers could use their size and procurement expertise to effectively outcompete small-scale and mid-tier buyers. Top-tier buyers can typically procure green power at lower cost and can directly influence suppliers. A tangible example of this phenomenon is utility renewable contracts. Utility renewable contracts are effectively a response to top-tier buyer demands for improved access to renewable energy in states without retail electricity competition (O'Shaughnessy et al. 2021). Utility renewable contracts could divert utility resources from programs to deploy renewables on behalf of small-scale and mid-tier buyers toward programs to deploy renewables on behalf of specific top-tier buyers. The net result could be accelerated renewable energy deployment but with fewer opportunities for small-scale and mid-tier buyer participation.

3.1.4.2 Claims Competition

A second challenge is that friendly competition among green power buyers could undermine the green power claims of small-scale and mid-tier buyers. As discussed in Section 3.2, top-tier buyers are pursuing increasingly complex claims about their renewable energy procurement. These claims are often motivated by friendly competition; top-tier green power buyers aim to differentiate their own procurement practices from those of their peers. In top-tier buyer efforts to distinguish their own procurement, top-tier buyer claims may imply small-scale and mid-tier procurement is less impactful. The risk is certain claims made by top-tier buyers could undermine confidence in the green power products relied on by small-scale and mid-tier buyers.

3.2 Managing Increasing Product and Claim Complexity

Voluntary green power products effectively exist to validate *claims* that el
make about renewable energy usage. Over time, both green power product
become increasingly complex. Increasing product and claim complexity po
implicit and explicit frameworks that underpin the voluntary green power
increasing claim complexity creates challenges for the market and legal fra
renewable energy use claims.

3.2.1 Voluntary Green Power Market Claims Frameworks

The voluntary green power market is largely self-regulated and supported
governing green power products and claims. Market conventions dictate th
energy use claims must be substantiated by RECs, and the details of those
consistent with the specific characteristics of RECs used to support those
formally recognized as a valid basis for making renewable energy use claims by the Federal Trade Commission, the U.S. Environmental Protection Agency, the U.S. Federal Energy Regulatory Commission, the U.S. Federal Energy Management Program, the American Bar Association, and at least 35 U.S. states and territories (Jones, Quarrier, and Kelty 2015). RECs are used as accounting mechanisms to comply with power disclosure requirements (Braslawsky, Jones, and Sotos 2016). RECs are also recognized for Scope 2 emissions reduction claims for greenhouse gas accounting purposes (Sotos 2015; CDP 2016; 3Degrees 2018). Third-party certification and verification services such as Green-e provide further validation for renewable energy use claims.

14

This report is available at no cost from the National Renewable Energy Laboratory at www.nrel.gov/publications.

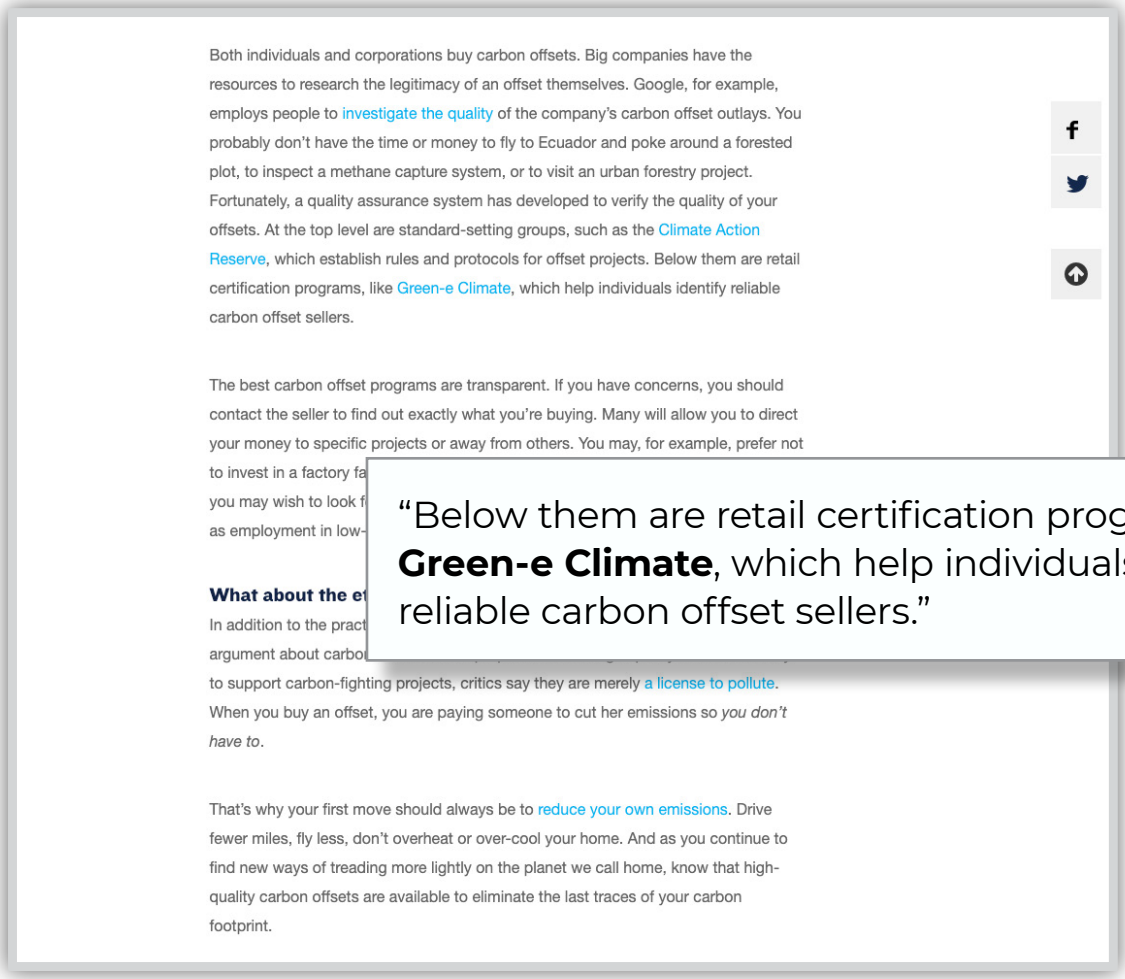
"Third-party certification and verification services such as **Green-e** provide further validation for renewable energy use claims."

Natural Resources Defense Council (NRDC)

- "NRDC works to safeguard the earth—its people, its plants and animals, and the natural systems on which all life depends"
- Currently has 6 programs
- More than 3 million members and 700 scientists, lawyers, and policy advocates with NRDC
- "Fighting polluters since 1970"

NRDC Article References

- Green-e® Climate referenced in article, "Should You Buy Carbon Offsets" written by Brian Palmer



Both individuals and corporations buy carbon offsets. Big companies have the resources to research the legitimacy of an offset themselves. Google, for example, employs people to investigate the quality of the company's carbon offset outlays. You probably don't have the time or money to fly to Ecuador and poke around a forested plot, to inspect a methane capture system, or to visit an urban forestry project. Fortunately, a quality assurance system has developed to verify the quality of your offsets. At the top level are standard-setting groups, such as the Climate Action Reserve, which establish rules and protocols for offset projects. Below them are retail certification programs, like Green-e Climate, which help individuals identify reliable carbon offset sellers.

The best carbon offset programs are transparent. If you have concerns, you should contact the seller to find out exactly what you're buying. Many will allow you to direct your money to specific projects or away from others. You may, for example, prefer not to invest in a factory fa
you may wish to look f
as employment in low-

What about the et

In addition to the pract
argument about carbo
to support carbon-fighting projects, critics say they are merely a license to pollute. When you buy an offset, you are paying someone to cut her emissions so *you don't have to*.

That's why your first move should always be to reduce your own emissions. Drive fewer miles, fly less, don't overheat or over-cool your home. And as you continue to find new ways of treading more lightly on the planet we call home, know that high-quality carbon offsets are available to eliminate the last traces of your carbon footprint.

"Below them are retail certification programs, like **Green-e Climate**, which help individuals identify reliable carbon offset sellers."

NRDC
NATURAL RESOURCES DEFENSE COUNCIL

NRDC Article References

- Green-e® certified RECs referenced in article, “NRDC’s Commitment to Green Starts with Its Offices” written by Melissa Denchak

including solar and wind.

Chicago

NRDC’s Chicago office was designed to

located near train and bus lines, and its open floor plan, which reduced the amount

use, carbon footp
feature recycled,
philodendrons tha
which is to conne
productivity. Ener
electronics, lightin
smart plug sensors that automatically power down electronics. The office offset renovation-generated carbon emissions with carbon credits and purchases of green power, in the form of Green-e certified Renewable Energy Credits.

> “The office offset renovation-generated carbon emissions with carbon credits and purchases of green power, in the form of **Green-e** certified Renewable Energy Credits.”

> “Carbon credits offset emissions caused by the renovation, and the office offsets its regular electricity consumption with **Green-e** certified Renewable Energy Credits.”

Santa Monica

NRDC’s LEED-certified office in Southern California is at the forefront of green building design. Centrally located in a

CRS

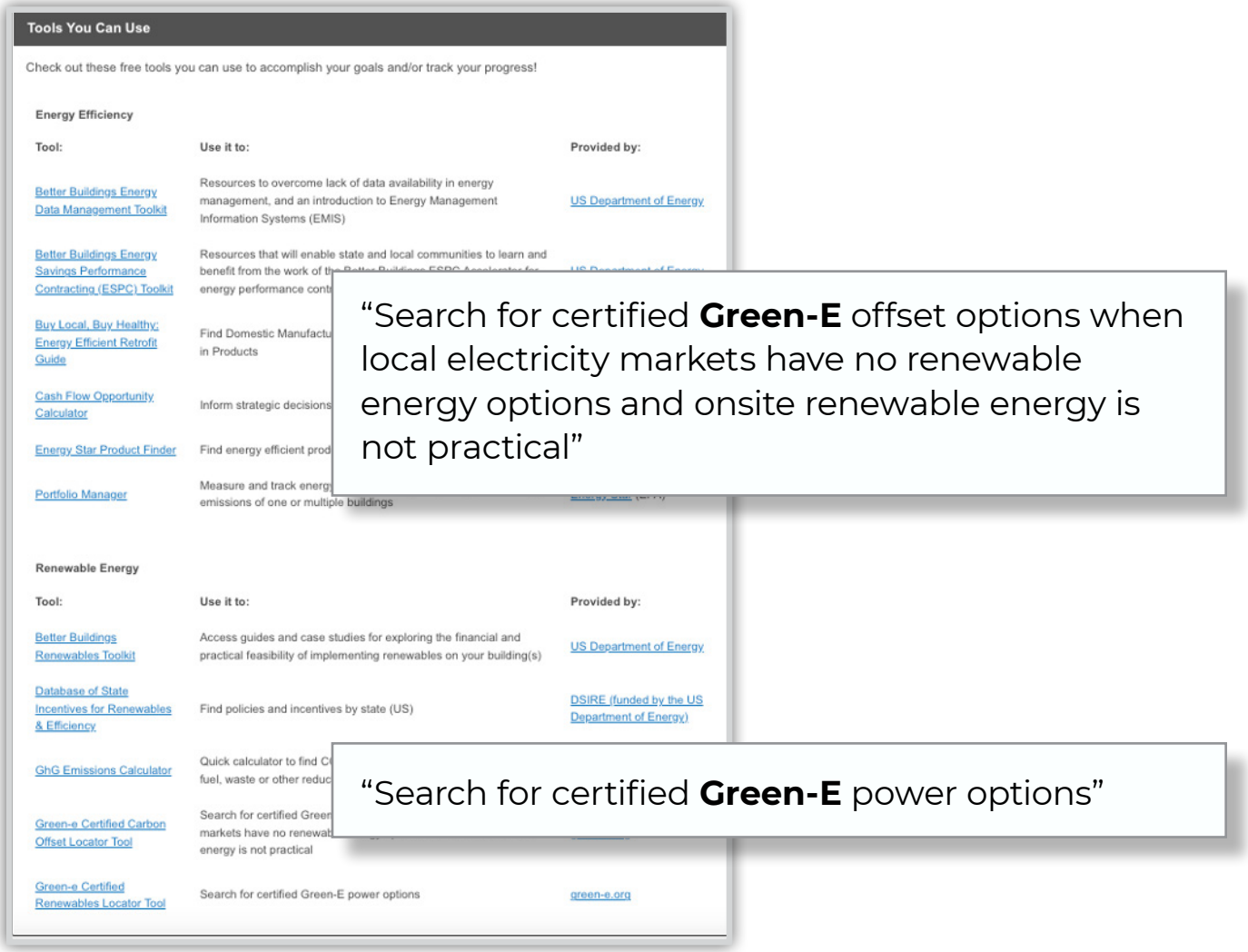
SUSTAINABLE PURCHASING LEADERSHIP COUNCIL

Sustainable Purchasing Leadership Council (SPLC)

- **Sustainable Purchasing Leadership Council** is a nonprofit organization with the mission to support and recognize purchasing leadership that accelerates the transition to a prosperous and sustainable future

SPLC Guidance for Leadership in Sustainable Purchasing

- SPLC's Guidance for Leadership in Sustainable Purchasing recommends purchasing Green-e Energy certified renewable energy for businesses that want to reduce the environmental impact of their electricity use
- It includes a section on reducing the impact of electricity use and recommends both implementing energy conservation measures and buying Green-e® Energy certified renewable energy

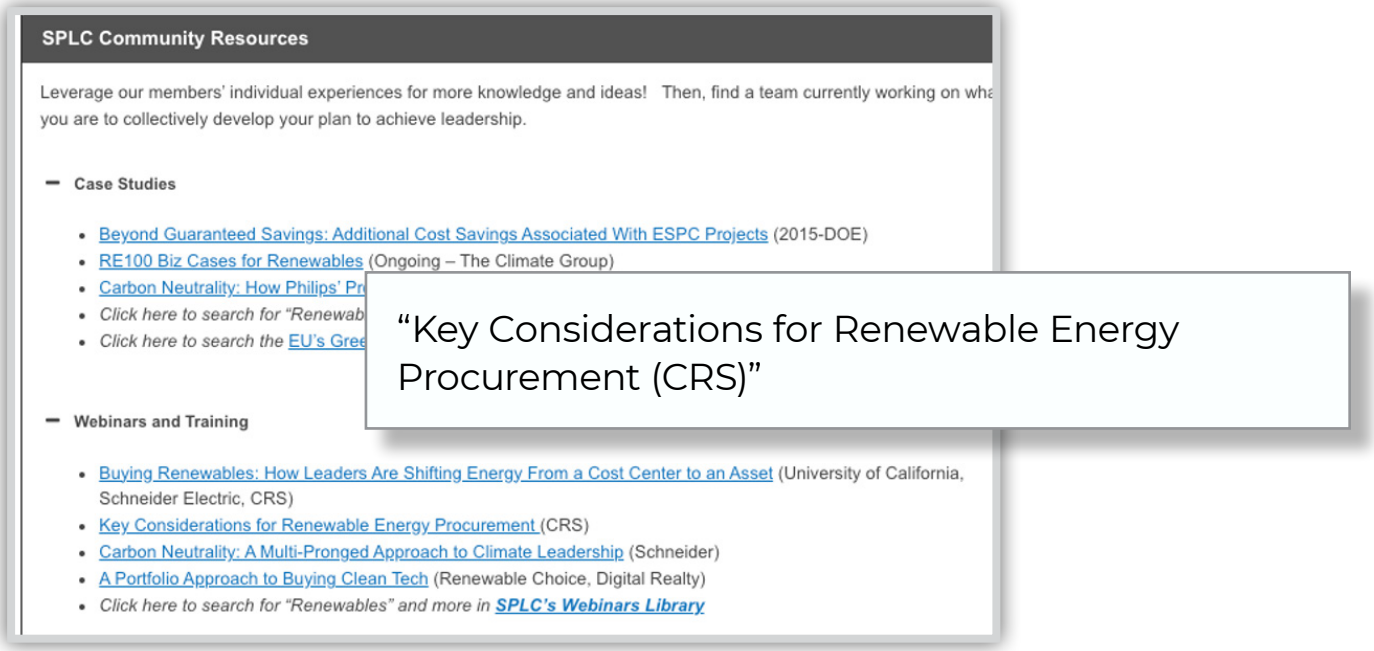


Note: *This screenshot was obtained from a source that requires login access.*

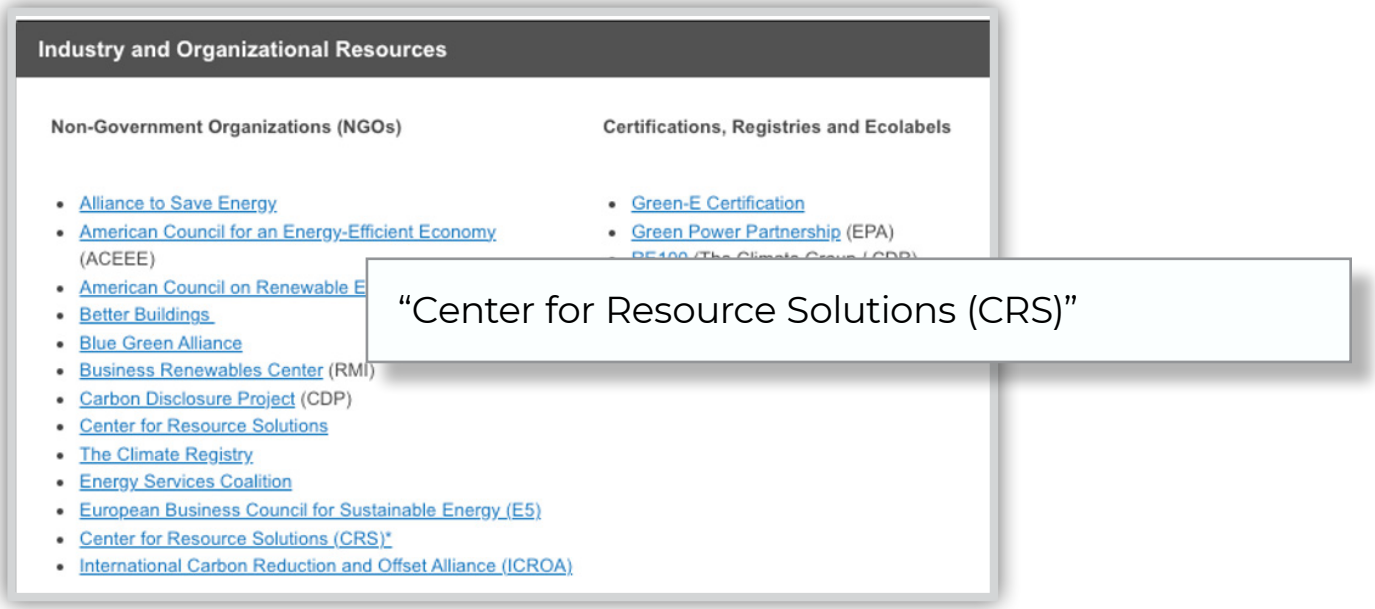
SUSTAINABLE PURCHASING LEADERSHIP COUNCIL

SPLC Guidance for Leadership in Sustainable Purchasing

- SPLC references CRS trainings, energy buyer educational support materials throughout
- It includes a section on reducing the impact of electricity use and recommends both implementing energy conservation measures and buying Green-e® Energy certified renewable energy



Note: *This screenshot was obtained from a source that requires login access.*



Note: *This screenshot was obtained from a source that requires login access.*

CRS

SUSTAINABLE PURCHASING LEADERSHIP COUNCIL

For all of the options discussed below, it is important that the product and purchase meet certain quality assurances, for example through independent certification to ensure accurate, exclusive delivery of renewable energy to prevent doubl

In the United States and Canada, c
site consumption and direct purcha
bundled REC products.[2]
In markets where renewable energ
energy usage claim, such as the U
is required (i.e. must be owned by,
tions set out below. In Europe, Gua
energy claims; they are required to
be transparent about their purchasing strategies, the length or timeframe of their commitments, and the portions of the electricity consumption from various sources of power.

"In the United States and Canada, organizations can use the **Green-e®** Program to obtain certified onsite consumption and direct purchases as well as certified retail bundled renewable electricity and unbundled REC products."

Note: *This screenshot was obtained from a source that requires login access.*

ELECTRICITY

SUSTAINABLE PURCHASING LEADERSHIP COUNCIL

Category Guidance V2.0 Executive Summary

Scope
Covers electricity consumed by the organization for ongoing operations, processes, or other uses.

Top sustainable purchasing strategies

- **Procure energy efficient equipment** are generally found within lighting, HV systems. Consider Energy Service Pe improvements with no upfront capital
  - The U.S. Department of Energy pr
  - The Energy Services Coalition web
- **Procure renewable energy:** the sele to evaluate purchasing priorities, such generation and impacts, scale, grid im
  - Self-generation, grid-connected.
  - Self-generation, off-grid.
  - Physical Power Purchase Agreem
  - Virtual Power Purchase Agreemen
  - Community Renewables/Solar.
  - Regulated Utility Renewable Energ
  - Competitive Supplier Renewable E
  - Unbundled Renewable Energy Cre
- **Options available will vary by location.** See the Explore Renewable Energy Purchasing Options section of Purchasing Category Guidance: Electricity for more detail.
- **Purchase carbon offsets:** where local electricity markets have no renewable energy options and onsite renewable energy is not practical, procurement of certified carbon offsets is recommended. Use https://www.icroa.org and http://www.green-e.org/offsets as a guide.

"**Purchase carbon offsets:** where local electricity markets have no renewable energy options and onsite renewable energy is not practical, procurement of certified carbon offsets is recommended. Use https://www.icroa.org and http://www.green-e.org/offsets as a guide."

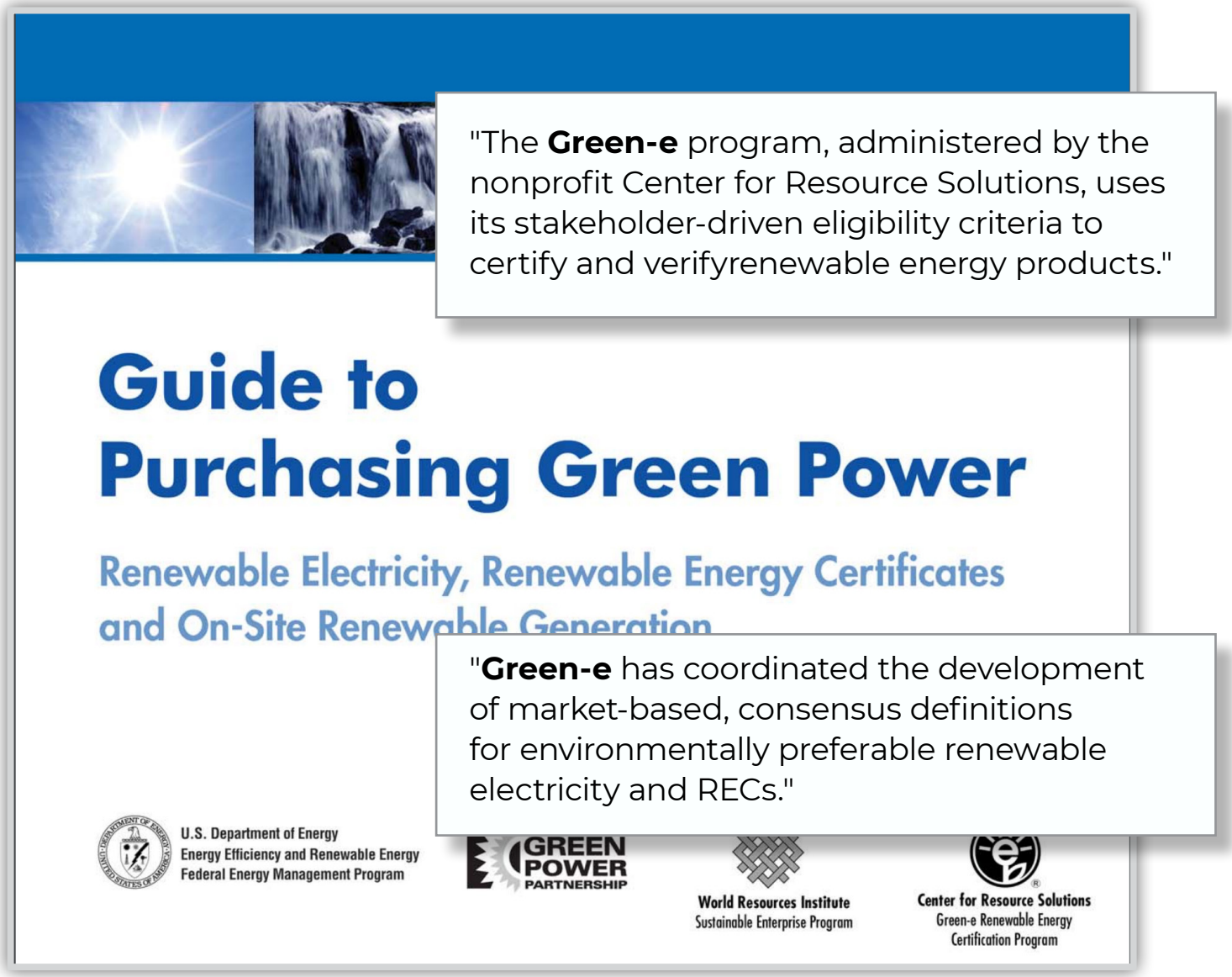
Note: *This screenshot was obtained from a source that requires login access.*

U.S. Department of Energy

- "The mission of the Energy Department is to ensure America's security and prosperity by addressing its energy, environmental and nuclear challenges through transformative science and technology solutions."

U.S. Department of Energy Guide to Purchasing Green Power

- In U.S. Department of Energy's "Guide to Purchasing Green Power", Green-e® is introduced and referenced as a certification program that identifies green power.

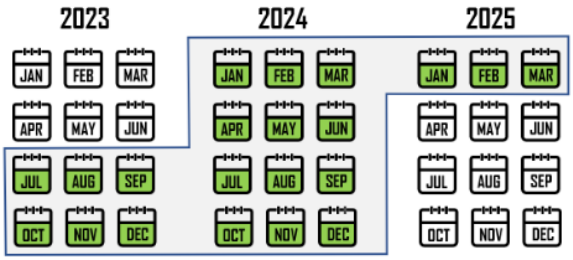


Better Climate Challenge Overview

- Green-e® referenced throughout the U.S. Department of Energy's overview of their Better Climate Challenge program

Each REC is assigned a serial number that consists of the tracking system's ID, location and date of generation, and type of renewable energy source. Tracking systems may charge small fees when RECs are issued or retired in the system.

States have different limits on the time between when a REC is generated and when it is retired. For example, Wisconsin and Nevada allow up to 4 years before a REC is retired, whereas New England allows only 3 months.[9] RECs certified by Green-e have a 21-month window—12 months of the calendar year when the REC is sold, 6 months before that year starts, and 3 months after that year ends. If a REC is sold in January or even in December of 2024, that REC must not be generated before July 2023 and then it must be retired by March 2025 (as shown in the graphic below).



3. REC Procurement

▶ **Voluntary and compliance ren**
Many consumers can purchase
numerous states require utility c
sources, a policy called a renew
the requirements of an RPS are

*A **renewable portfolio standar***
in which electricity companies
energy sources. Utilities that do
to make up the difference.

In a ***voluntary market***, consumers can choose to purchase RECs not because of a legal obligation to comply with an RPS but for other reasons. For example, companies might purchase RECs to claim that a certain percentage of their electricity consumption was met by renewable sources. If utilities in compliance markets purchase more renewable energy than required, this is also considered participation in the voluntary market.

"RECs certified by **Green-e** have a 21-month window—12 months of the calendar year when the REC is sold, 6 months before that year starts, and 3 months after that year ends."

[9] EPA Clean Energy-Environment Technical Forum. 2008. *Renewable Energy Certificates: Background and Resources.* US Environmental Protection Agency. https://www.epa.gov/sites/default/files/2016-03/documents/background_paper_3.pdf.
[10] National Conference of State Legislatures. 2021. *State Renewable Portfolio Standards and Goals.* Retrieved January 29, 2024, from https://www.ncsl.org/energy/state-renewable-portfolio-standards-and-goals.

Learn more at betterbuildingssolutioncenter.energy.gov/climate-challenge
ORNL/SPR-2022/2449

U.S. DEPARTMENT OF ENERGY

Classes and Tiers of RECs
In different states, RECs are classified based on the generation resource and the year generated. For example, in many states, ***Tier 1*** *or* ***Class I*** *RECs were generated based on solar or wind projects and in the past 5–7 years. These RECs have a higher demand and are thus more expensive than Class II, Class III, or Tier 2. For example, in Connecticut, Class II RECs are for electricity generated from a trash-to-energy facility, whereas Class III RECs are generated from combined heat and power systems with a minimum efficiency of 50% and built on or after 2006.[14] Likewise, the RPS of the District of Columbia classifies electricity generated from hydropower (other than pumped-storage generation) as Tier 2.[15]*

- **How to buy RECs**
  In the United States, roughly 850 electric utility companies—including municipal, investor-owned, and cooperative utility companies—offer programs (e.g., utility green power products, green pricing) to allow customers to pay an additional premium rate per kilowatt-hour to be supplied by renewable electricity bundled with RECs. Some utilities in certain states[16] offer optional programs (e.g., utility green tariffs) that allow commercial and industrial customers to buy bundled renewable electricity from a specific project. In both cases, customers need to make sure that purchased RECs are retired on their behalf by the utility company. Organizations should check with their utility company for the availability of bundled or unbundled RECs in their area.

  Alternatively, organizations may choose to
  case, purchasing verified and certified REC
  for international markets) is recommended.
  guarantee that RECs come from new renev
  the last 15 years) to support the developme
  about the Green-e certification program crit
  Energy Certification.[18]

  In general, if a utility company is supplying
  electricity as a part of its standard mix, the customers have the right to claim that percentage of renewable electricity where the utility is responsible for retiring the RECs for that generation on behalf of its customers.

  In deregulated electricity markets where customers are allowed to purchase energy from retail energy suppliers other than their local utility, customers can buy bundled RECs through PPAs or competitive green power products. However, in regulated electricity markets where customers do not have the choice to select the utility or energy provider, customers may seek the aforementioned options through their local utility company. Whether an organization is in a deregulated or a regulated electricity market, the option of procuring a virtual or financial PPA is always available, commonly in the form of bundled RECs. For more information on renewable electricity supply options and electricity markets, please see the Renewable Energy Guidance for Industry 2022.[1]

> "In this case, purchasing verified and certified RECs from a supplier that is **Green-e** certified (or I-REC17 certified for international markets) is recommended."

[14] Connecticut's Department of Energy and Environmental Protection: Public Utilities Regulatory Authority. 2023. *Connecticut Renewable Portfolio Standard*. Retrieved January 30, 2024, from https://portal.ct.gov/PURA/RPS/Renewable-Portfolio-Standards-Overview.
[15] NC Clean Energy Technology Center. 2023. *Renewable Portfolio Standard. Database of State Incentives for Renewables & Efficiency*. Retrieved January 30, 2024, from https://programs.dsireusa.org/system/program/detail/303.
[16] Clean Energy Buyers Association. 2023. *Availability of Utility Green Tariff Programs. Green Tariffs*. Retrieved January 30, 2024, from https://cebuyers.org/solutions/procure-clean-energy/green-tariffs/.
[17] International Tracking Standard Foundation. 2023. *I-REC for Electricity*. Retrieved January 31, 2024, from https://www.trackingstandard.org/product-code/electricity/.
[18] Green-e Energy. 2017. *Green-e Framework for Renewable Energy Certification.* Center for Resource Solutions https://www.green-e.org/docs/energy/framework/Green-e Framework for Renewable Energy Certification.pdf.

Learn more at betterbuildingssolutioncenter.energy.gov/climate-challenge
ORNL/SPR-2022/2449

U.S. DEPARTMENT OF ENERGY

CRS

5. Helpful Resources

- EPA's Green Power Partnership
- Center for Resource Solutions
- Green-e Energy and Green-e Marketplace
- Green-e approved Regional Tracking Systems
- GHG Protocol Scope 2 Guidance

6. Authors and Acknowledgements

This guide was developed for the U.S. DOE's Office of Energy Efficiency and Renewable Energy as part of the Better Buildings, Better Plants program by **Dr. Ahmad Abbas**, **Dr. Christopher Price**, and **Thomas Wenning** of the Energy and Transportation Sciences Division at Oak Ridge National Laboratory, Oak Ridge, TN, under Contract No. DE-AC05-00OR22725.

The efforts of the following contributors are appreciated for their review and suggestions for this report: Paulomi Nandy, ORNL; Subodh Chaudhari, ORNL; R. Bruce Lung, DOE; John O'Neill, DOE; and Cynthia Cummis, DOE

"Center for Resource Solutions, **Green-e** Energy and Green-e Marketplace, **Green-e** approved Regional Tracking Systems"

Learn more at betterbuildingssolutioncenter.energy.gov/climate-challenge
ORNL/SPR-2022/2449

United States Environmental Protection Agency (US EPA)

- The US EPA's main mission is to "protect human health and the environment"
- They have developed and enforced national standards and help those who cannot follow or comply with those regulations

Green Power Purchases at EPA

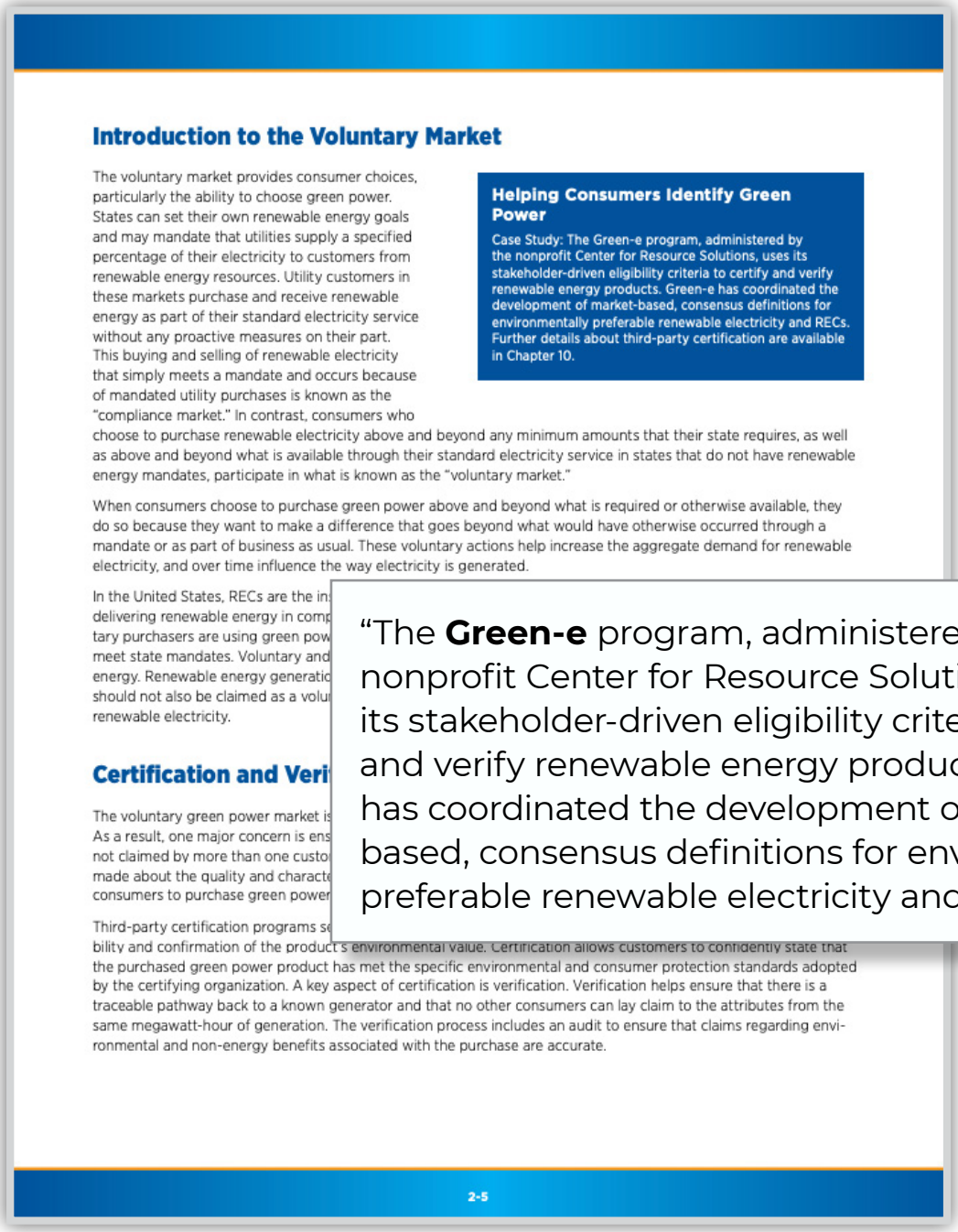
- Green-e® certification is referenced on the EPA's webpage about Green Power Purchases
- The EPA also recommends certification and verification in their "RECs: Making Green Power Possible" video.

"EPA obtained 11.777 million kilowatt-hours (kWh) of **Green-e** certified RECs to supplement onsite renewable generation in FY 2022."

EPA United States Environmental Protection Agency

EPA's Guide to Purchasing Green Power

- Green-e® referenced throughout the EPA's Guide to Purchasing Green Power



Introduction to the Voluntary Market

The voluntary market provides consumer choices, particularly the ability to choose green power. States can set their own renewable energy goals and may mandate that utilities supply a specified percentage of their electricity to customers from renewable energy resources. Utility customers in these markets purchase and receive renewable energy as part of their standard electricity service without any proactive measures on their part. This buying and selling of renewable electricity that simply meets a mandate and occurs because of mandated utility purchases is known as the "compliance market." In contrast, consumers who choose to purchase renewable electricity above and beyond any minimum amounts that their state requires, as well as above and beyond what is available through their standard electricity service in states that do not have renewable energy mandates, participate in what is known as the "voluntary market."

Helping Consumers Identify Green Power

Case Study: The Green-e program, administered by the nonprofit Center for Resource Solutions, uses its stakeholder-driven eligibility criteria to certify and verify renewable energy products. Green-e has coordinated the development of market-based, consensus definitions for environmentally preferable renewable electricity and RECs. Further details about third-party certification are available in Chapter 10.

When consumers choose to purchase green power above and beyond what is required or otherwise available, they do so because they want to make a difference that goes beyond what would have otherwise occurred through a mandate or as part of business as usual. These voluntary actions help increase the aggregate demand for renewable electricity, and over time influence the way electricity is generated.

In the United States, RECs are the in
delivering renewable energy in comp
tary purchasers are using green pow
meet state mandates. Voluntary and
energy. Renewable energy generatio
should not also be claimed as a volu
renewable electricity.

Certification and Veri

The voluntary green power market is
As a result, one major concern is ens
not claimed by more than one custo
made about the quality and characte
consumers to purchase green power

Third-party certification programs s
bility and confirmation of the product's environmental value. Certification allows customers to confidently state that the purchased green power product has met the specific environmental and consumer protection standards adopted by the certifying organization. A key aspect of certification is verification. Verification helps ensure that there is a traceable pathway back to a known generator and that no other consumers can lay claim to the attributes from the same megawatt-hour of generation. The verification process includes an audit to ensure that claims regarding environmental and non-energy benefits associated with the purchase are accurate.

2-5

"The **Green-e** program, administered by the nonprofit Center for Resource Solutions, uses its stakeholder-driven eligibility criteria to certify and verify renewable energy products. **Green-e** has coordinated the development of market-based, consensus definitions for environmentally preferable renewable electricity and RECs."

Contact

Michelle McGinty

SENIOR MANAGER, PROGRAM OUTREACH

michelle.mcginty@resource-solutions.org

415.568.4284

Chip Wood

SENIOR DIRECTOR, STRATEGIC PARTNERSHIPS

chip.wood@resource-solutions.org

415.568.4287

CRS™

1012 Torney Ave. 2nd Floor; San Francisco, CA 94109

www.resource-solutions.org | 415-561-2100