Green-e® References and Endorsements

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CRS™

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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

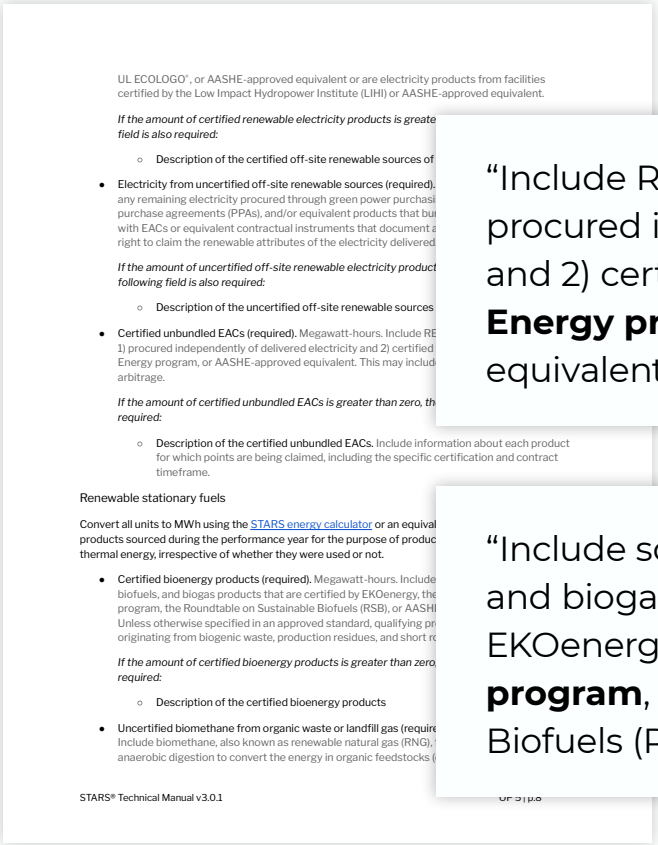
Green-e® International Citations

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 5: Energy Use

- "Green-e® Energy and Green-e® Renewable Fuels are referenced in points awarded for generating, using, and/or purchasing clean or renewable energy for their Energy Use (OP 5) in the Sustainability Tracking, Assessment & Rating System (STARS) v3.0.1"



UL ECOLOGO®, or AASHE-approved equivalent or are electricity products from facilities certified by the Low Impact Hydropower Institute (LIHI) or AASHE-approved equivalent.

If the amount of certified renewable electricity products is greate
field is also required:

- Description of the certified off-site renewable sources of

- Electricity from uncertified off-site renewable sources (required). any remaining electricity procured through green power purchasi purchase agreements (PPAs), and/or equivalent products that bu with EACs or equivalent contractual instruments that document a right to claim the renewable attributes of the electricity delivered

If the amount of uncertified off-site renewable electricity product following field is also required:

- Description of the uncertified off-site renewable sources

- Certified unbundled EACs (required). Megawatt-hours. Include RE 1) procured independently of delivered electricity and 2) certified Energy program, or AASHE-approved equivalent. This may includ arbitrage.

If the amount of certified unbundled EACs is greater than zero, th required:

- Description of the certified unbundled EACs. Include information about each product for which points are being claimed, including the specific certification and contract timeframe.

Renewable stationary fuels

Convert all units to MWh using the STARS energy calculator or an equival products sourced during the performance year for the purpose of produc thermal energy, irrespective of whether they were used or not.

- Certified bioenergy products (required). Megawatt-hours. Include biofuels, and biogas products that are certified by EKOenergy, the program, the Roundtable on Sustainable Biofuels (RSB), or AASHE Unless otherwise specified in an approved standard, qualifying pr originating from biogenic waste, production residues, and short r

If the amount of certified bioenergy products is greater than zero, required:

- Description of the certified bioenergy products

- Uncertified biomethane from organic waste or landfill gas (require Include biomethane, also known as renewable natural gas (RNG), anaerobic digestion to convert the energy in organic feedstocks (

STARS® Technical Manual v3.0.1

OP 5 | p.8

"Include RECs, GOs, and I-RECs that are 1) procured independently of delivered electricity and 2) certified by EKOenergy, the **Green-e® Energy program**, or AASHE-approved equivalent."

"Include solid biomass, liquid biofuels, and biogas products that are certified by EKOenergy, the **Green-e® Renewable Fuels program**, the Roundtable on Sustainable Biofuels (RSB), or AASHE-approved equivalent."

Glossary

Energy attribute certificates (EACs) – Contractual instruments that represent and convey all attributes of renewable electricity generation, without requiring that the electricity itself be sold with the attributes. When a generator delivers electricity to the grid, it is able to sell these attributes in the form of an EAC to another party who draws electricity from the grid, as a means of tracking who is buying and using the renewable electricity. Examples of EACs include:

- Renewable Energy Certificates (RECs): market-based instruments that represent the rights to the environmental, social, and other non-power attributes of renewable electricity generation.
- Guarantees of Origin (GOs): Certificates issued by European energy authorities to certify that electricity was produced from renewable energy sources.
- International RECs (I-RECs): a type of energy attribute certificate intended for regions without an existing or reliable energy attribute tracking framework.

Full-time equivalent (FTE) – A unit used to measure employed persons or students in a way that makes them comparable although they may work or study a different number of hours per week. An institution should report its best estimates for FTE figures, annualized as feasible and calculated according to relevant national, regional or international standards. IPEDS, for example, calculates the number of FTE staff by summing the total number of full-time staff and adding one-third of the total number of part-time staff. [Adapted from the definition used by Eurostat.]

Gross floor area of building space – The total amount of building space included within the institutional boundary. Any standard definition of building space may be used (e.g., ASHRAE, ANSI/BOMA, IECC) as long as it is used consistently. Unless otherwise spec
are excluded. Buildings within the overall STARS boundary that the institutio
institution is the only tenant) should be included. Buildings that are not own
for which the institution is one of multiple tenants may be excluded. If the in
include such buildings, it should include all multi-tenant buildings that are w
overall STARS boundary and for which the institution is a tenant. If an institu
leased spaces, the institution should count only the square footage of buildi
not the entire building.

Renewable sources – Energy sources that are inexhaustible, i.e., that restor
periods of time and do not diminish. The following energy sources qualify as

- Solar
- Wind
- Geothermal
- Hydropower
- Ocean-based energy captured through tidal, wave, or ocean thermal energy conversion technologies
- Solid, liquid, and gaseous forms of biomass from biogenic waste, production residues, and/or short rotation woody crops
- Renewable hydrogen (hydrogen produced using electricity from renewable sources)

[Adapted from the definitions used by the Center for Resource Solutions (CRS) and the US Environmental Protection Agency (EPA).]

"Adapted from the definitions used by the **Center for Resource Solutions (CRS)** and the US Environmental Protection Agency (EPA)"

AASHE STARS OP 6: Greenhouse Gas Emissions

- Green-e® Climate is referenced in points awarded for measuring and reducing Greenhouse Gas Emissions (OP 6) in the Sustainability Tracking, Assessment & Rating System (STARS) v3.0.1

Measurement

For carbon sinks, report on the same performance period used in indicator 6.1.

For baseline emissions, an institution may choose annual start and end dates that work best with the historic data available (e.g., fiscal or calendar year), as long as data are reported from a consecutive 12-month period. This may be, for example, a baseline year that the institution has adopted as part of its sustainability plans or policies or in the context of other reporting obligations.

Documentation

Report the following information in the online Reporting Tool, with carbon sink and baseline GHG emissions figures provided in metric tons (tonnes) of carbon dioxide equivalent. Non-additional sequestration does not qualify as a carbon sink for scoring purposes, but may be reported in the optional field provided.

Carbon sinks

If claiming points for a scope 1 and scope 2 GHG inventory, the following three fields are required:

- Third party certified **carbon offsets**. Metric tons of CO_2 equivalent. To qualify, a carbon offset must be certified by the Green-e® Climate program, a Green-e® endorsed project-level certification program, or AASHE-approved equivalent.

  If the amount of certified carbon offsets is greater than zero, the following field is also required:

  - Description of the institution's third party certified carbon o
    about the specific programs under which the offsets are ce

- Carbon storage from on-site composting. Metric tons of CO_2 equiva
  composted materials must originate and be applied on-site, thereby
  within the institutional boundary and avoiding the potential for doub
  entities. The compost may be produced off-site, but must originate
  and be returned to the campus for use as a soil amendment.

  *If the amount of carbon storage from composting is greater than ze
  also required:*

  - Description of the institution's carbon storage from on-site
    information about the specific composting projects and the
    methodologies or protocols used.

- Carbon sold or transferred. Metric tons of CO_2 equivalent. For example, in the form of carbon offsets or **verified emission reductions**.

- Carbon storage from non-additional sequestration on institution-owned land (optional). Metric tons of CO_2 equivalent. If quantified, report carbon storage resulting from land management (i.e., carbon that would be released to the atmosphere if the land were managed differently). This data is for informational purposes only and does not contribute to scoring.

STARS® Technical Manual v3.0.1 OP 6 | p.11

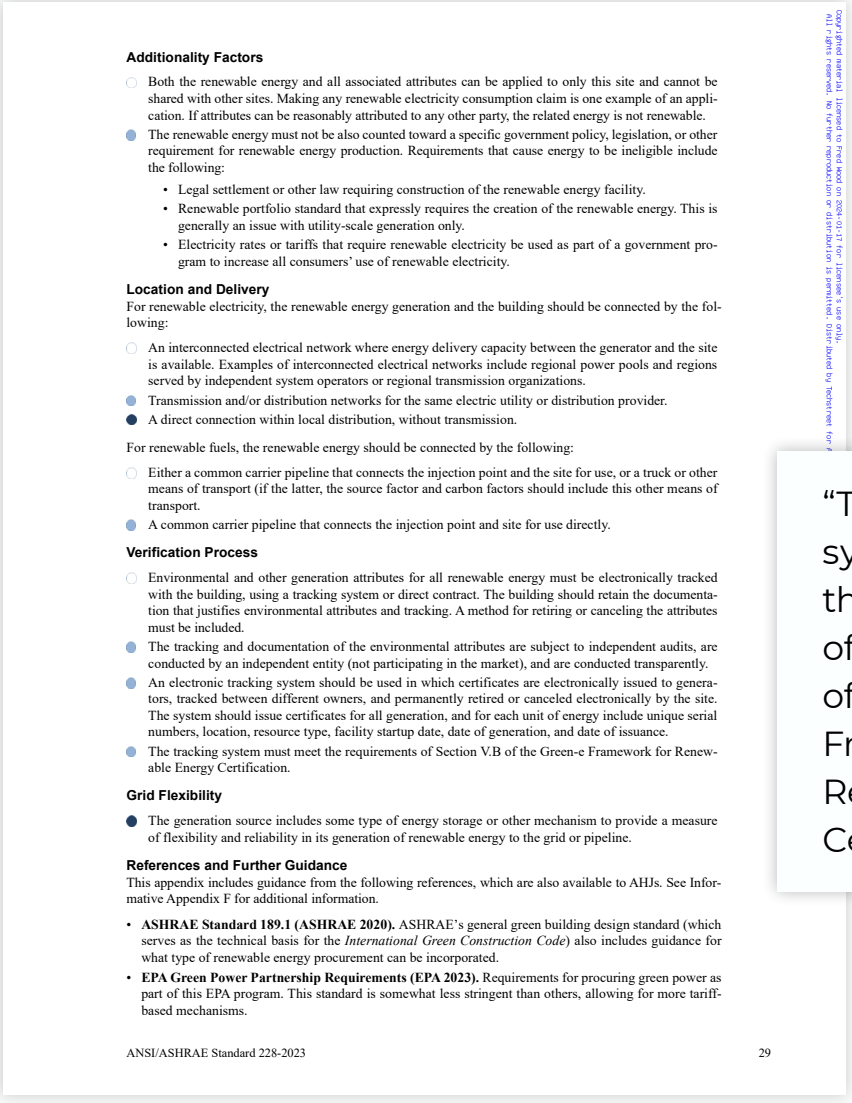
> "To qualify, a carbon offset must be certified by the **Green-e® Climate program**, a **Green-e®** endorsed project-level certification program, or AASHE-approved equivalent."

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 be electronically tracked with the building, using a tracking system or direct contract. The building should retain the documentation that justifies environmental attributes and tracking. A method for retiring or canceling the attributes must be included.
- The tracking and documentation of the environmental attributes are subject to independent audits, are conducted by an independent entity (not participating in the market), and are conducted transparently.
- An electronic tracking system should be used in which certificates are electronically issued to generators, tracked between different owners, and permanently retired or canceled electronically by the site. The system should issue certificates for all generation, and for each unit of energy include unique serial numbers, location, resource type, facility startup date, date of generation, and date of issuance.
- The tracking system must meet the requirements of Section V.B of the Green-e Framework for Renewable Energy Certification.

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
- **Solar Energy Industries Association Model Leases and PP** tracts that was originally developed under the Solar Access to 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."

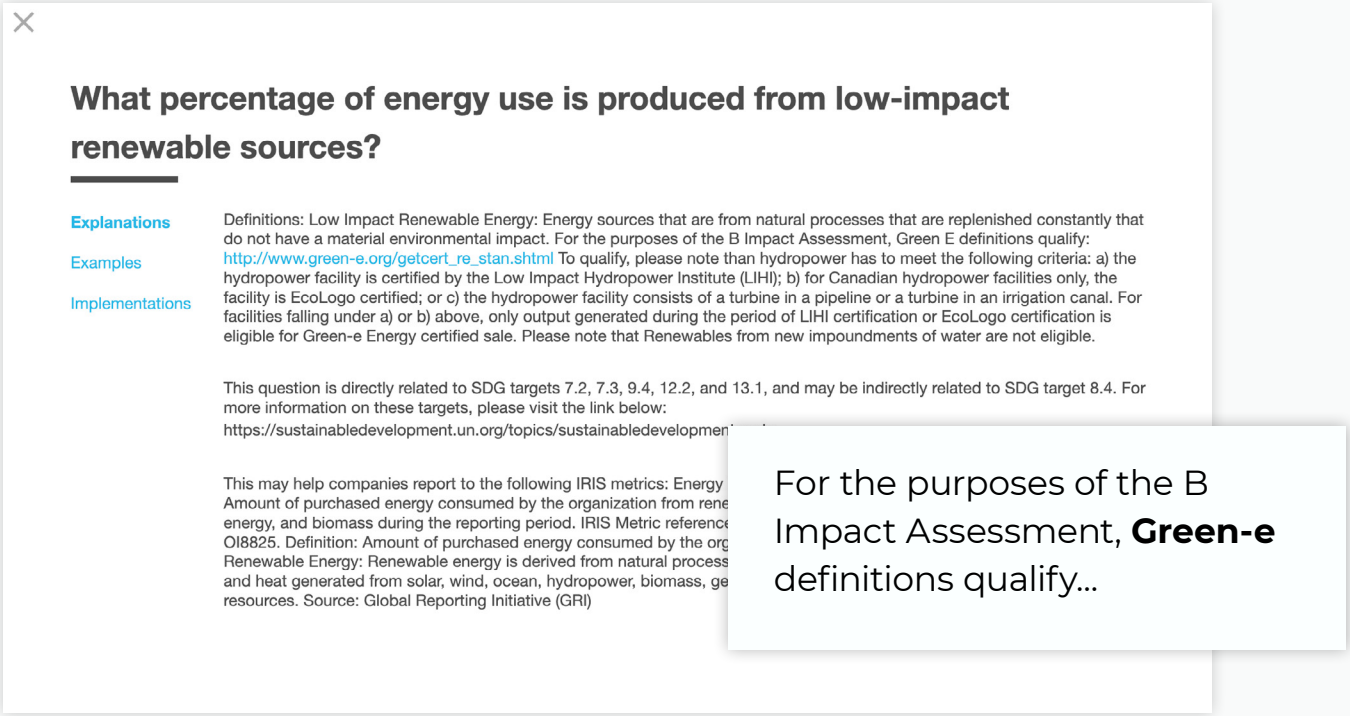
"**Green-e** Renewable Fuels Standard for Canada and the United States (CRS 2017). The defining standard for the use of nonelectric fuels in this popular certification program for renewable procurement. Detailed language to evaluate types of fuel and procurement instruments."

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



What percentage of energy use is produced from low-impact renewable sources?

Explanations

Examples

Implementations

Definitions: Low Impact Renewable Energy: Energy sources that are from natural processes that are replenished constantly that do not have a material environmental impact. For the purposes of the B Impact Assessment, Green E definitions qualify: http://www.green-e.org/getcert_re_stan.shtml To qualify, please note than hydropower has to meet the following criteria: a) the hydropower facility is certified by the Low Impact Hydropower Institute (LIHI); b) for Canadian hydropower facilities only, the facility is EcoLogo certified; or c) the hydropower facility consists of a turbine in a pipeline or a turbine in an irrigation canal. For facilities falling under a) or b) above, only output generated during the period of LIHI certification or EcoLogo certification is eligible for Green-e Energy certified sale. Please note that Renewables from new impoundments of water are not eligible.

This question is directly related to SDG targets 7.2, 7.3, 9.4, 12.2, and 13.1, and may be indirectly related to SDG target 8.4. For more information on these targets, please visit the link below:
https://sustainabledevelopment.un.org/topics/sustainabledevelopmen

This may help companies report to the following IRIS metrics: Energy
Amount of purchased energy consumed by the organization from rene
energy, and biomass during the reporting period. IRIS Metric reference
OI8825. Definition: Amount of purchased energy consumed by the org
Renewable Energy: Renewable energy is derived from natural process
and heat generated from solar, wind, ocean, hydropower, biomass, ge
resources. Source: Global Reporting Initiative (GRI)

For the purposes of the B Impact Assessment, **Green-e** definitions qualify...

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

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

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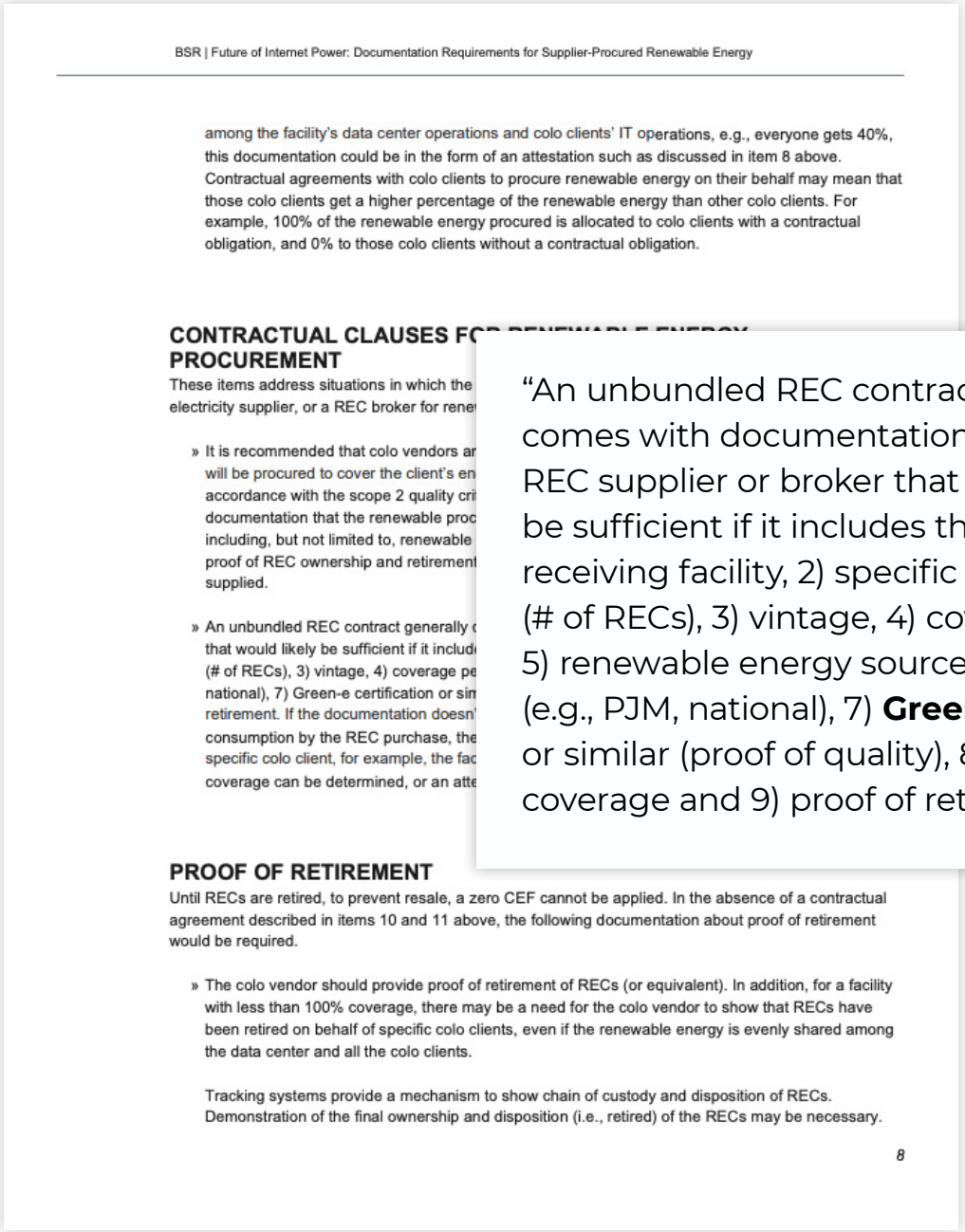
BSR®



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 FO
PROCUREMENT

These items address situations in which the
electricity supplier, or a REC broker for rene

» It is recommended that colo vendors ar
will be procured to cover the client's en
accordance with the scope 2 quality cri
documentation that the renewable proc
including, but not limited to, renewable
proof of REC ownership and retirement
supplied.

» An unbundled REC contract generally
that would likely be sufficient if it includ
(# of RECs), 3) vintage, 4) coverage pe
national), 7) Green-e certification or sim
retirement. If the documentation doesn'
consumption by the REC purchase, the
specific colo client, for example, the fac
coverage can be determined, or an atte

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.

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"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 on its scope 2, and/or both count the emissions as their scop
avoided.

Current scope accounting practices am
interpretations of the GHGP. This coul
throughout the colo industry. Based on
current GHGP, under the operational c
3 emissions.

B. THE IMPLICATIONS OF

Not only is double-counting discourage
terms when a renewable energy purch
zero-carbon attribute of the purchase t
current protocol does not provide for m
accounting for the same emissions as
only the party in "possession" of the re
zerocarbon claim. Other parties in the
renewable energy purchase for emissi
and attestations.

Additionally, double-counting of renew
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/.

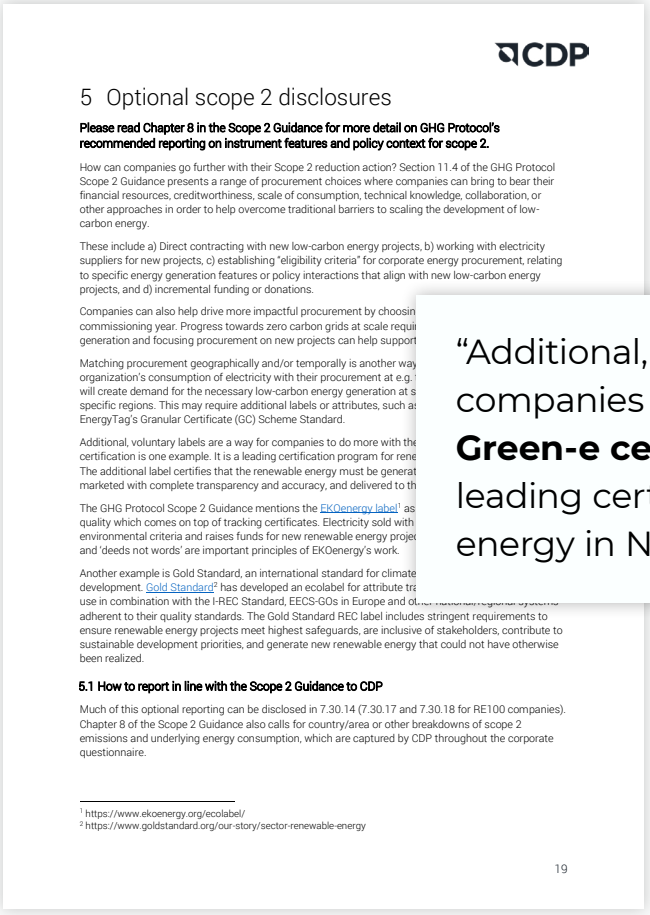
"Additionally, double-counting of renewable energy purchases by multiple companies accounting for the same emissions as scope 2 is addressed by the North America CRS **Green-e** Program.[7] CRS states in its Summary of WRI Scope 2 Guidance that "**Green-e** Energy specifically restricts double claims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



CDP

5 Optional scope 2 disclosures

Please read Chapter 8 in the Scope 2 Guidance for more detail on GHG Protocol's recommended reporting on instrument features and policy context for scope 2.

How can companies go further with their Scope 2 reduction action? Section 11.4 of the GHG Protocol Scope 2 Guidance presents a range of procurement choices where companies can bring to bear their financial resources, creditworthiness, scale of consumption, technical knowledge, collaboration, or other approaches in order to help overcome traditional barriers to scaling the development of low-carbon energy.

These include a) Direct contracting with new low-carbon energy projects, b) working with electricity suppliers for new projects, c) establishing "eligibility criteria" for corporate energy procurement, relating to specific energy generation features or policy interactions that align with new low-carbon energy projects, and d) incremental funding or donations.

Companies can also help drive more impactful procurement by choosin
commissioning year. Progress towards zero carbon grids at scale requi
generation and focusing procurement on new projects can help support

Matching procurement geographically and/or temporally is another way
organization's consumption of electricity with their procurement at e.g.
will create demand for the necessary low-carbon energy generation at s
specific regions. This may require additional labels or attributes, such a
EnergyTag's Granular Certificate (GC) Scheme Standard.

Additional, voluntary labels are a way for companies to do more with the
certification is one example. It is a leading certification program for rene
The additional label certifies that the renewable energy must be generat
marketed with complete transparency and accuracy, and delivered to th

The GHG Protocol Scope 2 Guidance mentions the EKOenergy label[1] as
quality which comes on top of tracking certificates. Electricity sold with
environmental criteria and raises funds for new renewable energy proje
and 'deeds not words' are important principles of EKOenergy's work.

Another example is Gold Standard, an international standard for climate
development. Gold Standard[2] has developed an ecolabel for attribute tra
use in combination with the I-REC Standard, EECS-GOs in Europe and ot
adherent to their quality standards. The Gold Standard REC label includes stringent requirements to ensure renewable energy projects meet highest safeguards, are inclusive of stakeholders, contribute to sustainable development priorities, and generate new renewable energy that could not have otherwise been realized.

5.1 How to report in line with the Scope 2 Guidance to CDP

Much of this optional reporting can be disclosed in 7.30.14 (7.30.17 and 7.30.18 for RE100 companies). Chapter 8 of the Scope 2 Guidance also calls for country/area or other breakdowns of scope 2 emissions and underlying energy consumption, which are captured by CDP throughout the corporate questionnaire.

[1] https://www.ekoenergy.org/ecolabel/
[2] https://www.goldstandard.org/our-story/sector-renewable-energy

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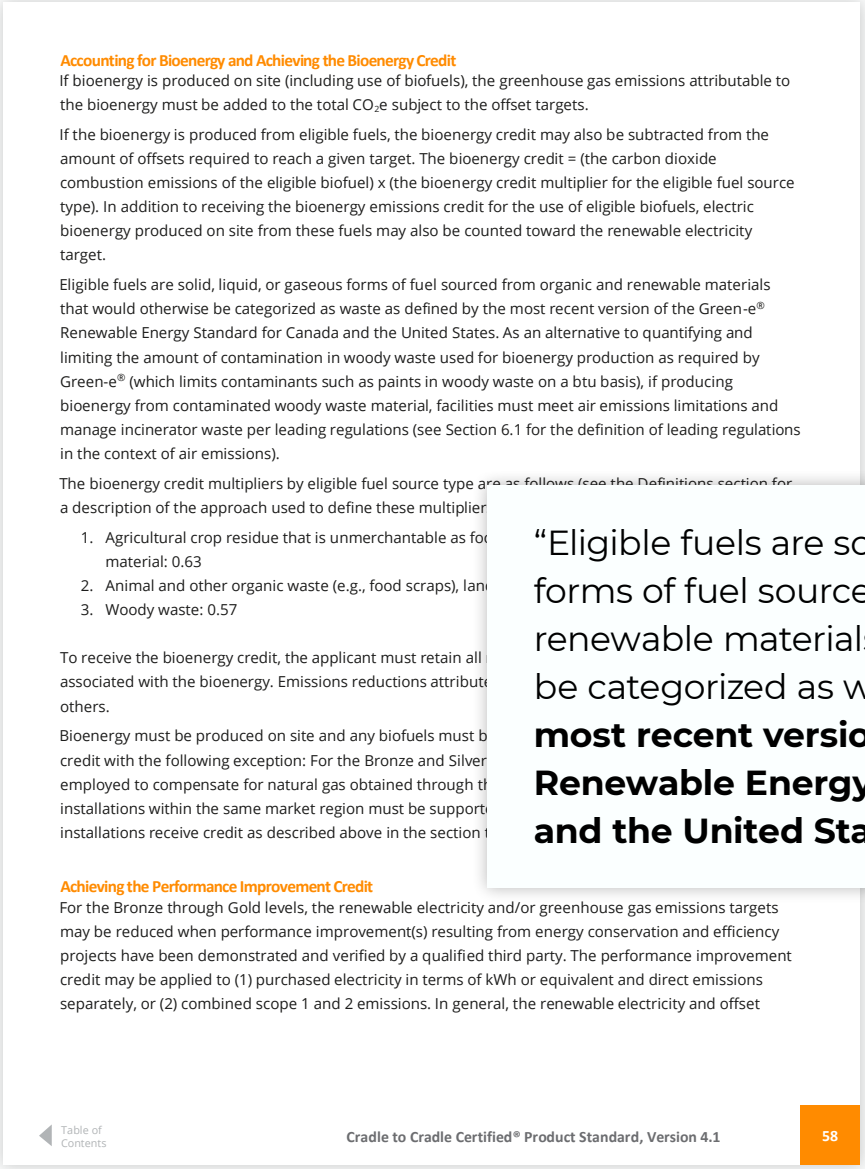
"Additional, voluntary labels are a way for companies to do more with their purchases. **Green-e certification** is one example. It is a leading certification program for renewable energy in North America."

Cradle To Cradle

- The Cradle to Cradle Products Innovation Institute sets the standards for circular materials, products, and systems.

Cradle To Cradle Certified® Product Standard

- Green-e® Energy Referenced in Cradle to Cradle's Certified® Product Standard



Accounting for Bioenergy and Achieving the Bioenergy Credit

If bioenergy is produced on site (including use of biofuels), the greenhouse gas emissions attributable to the bioenergy must be added to the total CO_2e subject to the offset targets.

If the bioenergy is produced from eligible fuels, the bioenergy credit may also be subtracted from the amount of offsets required to reach a given target. The bioenergy credit = (the carbon dioxide combustion emissions of the eligible biofuel) x (the bioenergy credit multiplier for the eligible fuel source type). In addition to receiving the bioenergy emissions credit for the use of eligible biofuels, electric bioenergy produced on site from these fuels may also be counted toward the renewable electricity target.

Eligible fuels are solid, liquid, or gaseous forms of fuel sourced from organic and renewable materials that would otherwise be categorized as waste as defined by the most recent version of the Green-e® Renewable Energy Standard for Canada and the United States. As an alternative to quantifying and limiting the amount of contamination in woody waste used for bioenergy production as required by Green-e® (which limits contaminants such as paints in woody waste on a btu basis), if producing bioenergy from contaminated woody waste material, facilities must meet air emissions limitations and manage incinerator waste per leading regulations (see Section 6.1 for the definition of leading regulations in the context of air emissions).

The bioenergy credit multipliers by eligible fuel source type are as follows (see the Definitions section for a description of the approach used to define these multiplier

1. Agricultural crop residue that is unmerchantable as fo material: 0.63
2. Animal and other organic waste (e.g., food scraps), lan
3. Woody waste: 0.57

To receive the bioenergy credit, the applicant must retain all associated with the bioenergy. Emissions reductions attribut others.

Bioenergy must be produced on site and any biofuels must b credit with the following exception: For the Bronze and Silver employed to compensate for natural gas obtained through t installations within the same market region must be support installations receive credit as described above in the section

Achieving the Performance Improvement Credit

For the Bronze through Gold levels, the renewable electricity and/or greenhouse gas emissions targets may be reduced when performance improvement(s) resulting from energy conservation and efficiency projects have been demonstrated and verified by a qualified third party. The performance improvement credit may be applied to (1) purchased electricity in terms of kWh or equivalent and direct emissions separately, or (2) combined scope 1 and 2 emissions. In general, the renewable electricity and offset

Table of Contents

Cradle to Cradle Certified® Product Standard, Version 4.1

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"Eligible fuels are solid, liquid, or gaseous forms of fuel sourced from organic and renewable materials that would otherwise be categorized as waste as **defined by the most recent version of the Green-e ® Renewable Energy Standard for Canada and the United States**."

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

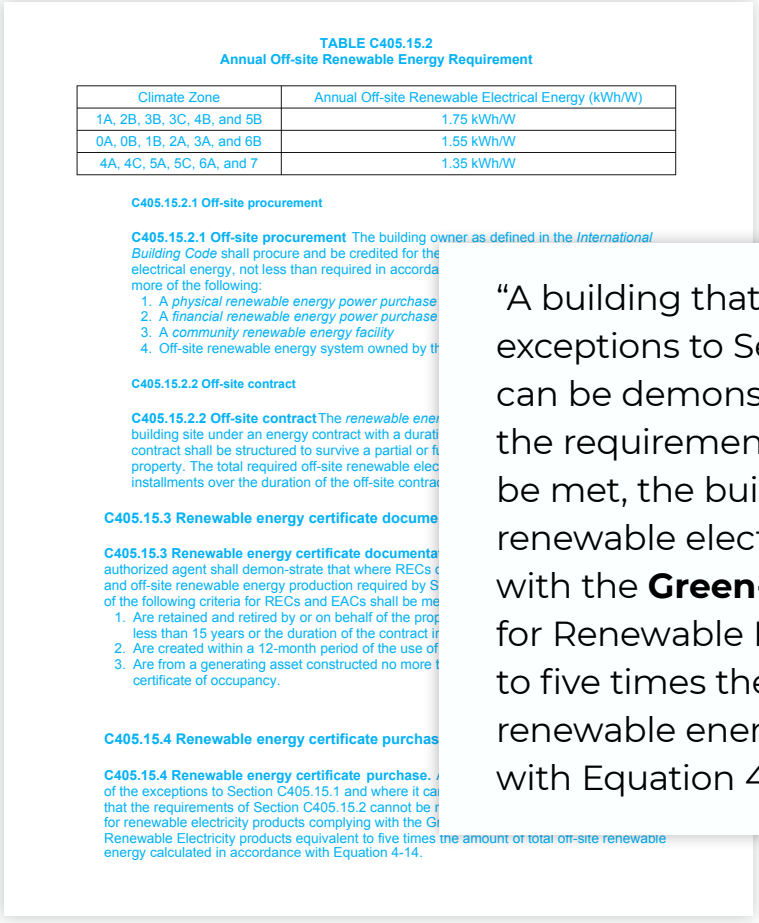


TABLE C405.15.2
Annual Off-site Renewable Energy Requirement

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 credited for the electrical energy, not less than required in accorda more of the following:

1. A *physical renewable energy power purchase*
2. A *financial renewable energy power purchase*
3. A *community renewable energy facility*
4. Off-site renewable energy system owned by th

C405.15.2.2 Off-site contract

C405.15.2.2 Off-site contract The *renewable ener* building site under an energy contract with a durati contract shall be structured to survive a partial or fi property. The total required off-site renewable elec installments over the duration of the off-site contra

C405.15.3 Renewable energy certificate docume

C405.15.3 Renewable energy certificate documenta authorized agent shall demon-strate that where RECs and off-site renewable energy production required by S of the following criteria for RECs and EACs shall be me

1. Are retained and retired by or on behalf of the prop less than 15 years or the duration of the contract ir
2. Are created within a 12-month period of the use of
3. Are from a generating asset constructed no more t certificate of occupancy.

C405.15.4 Renewable energy certificate purchas

C405.15.4 Renewable energy certificate purchase. of the exceptions to Section C405.15.1 and where it ca that the requirements of Section C405.15.2 cannot be r for renewable electricity products complying with the Gr Renewable Electricity products equivalent to five times the amount of total off-site renewable energy calculated in accordance with Equation 4-14.

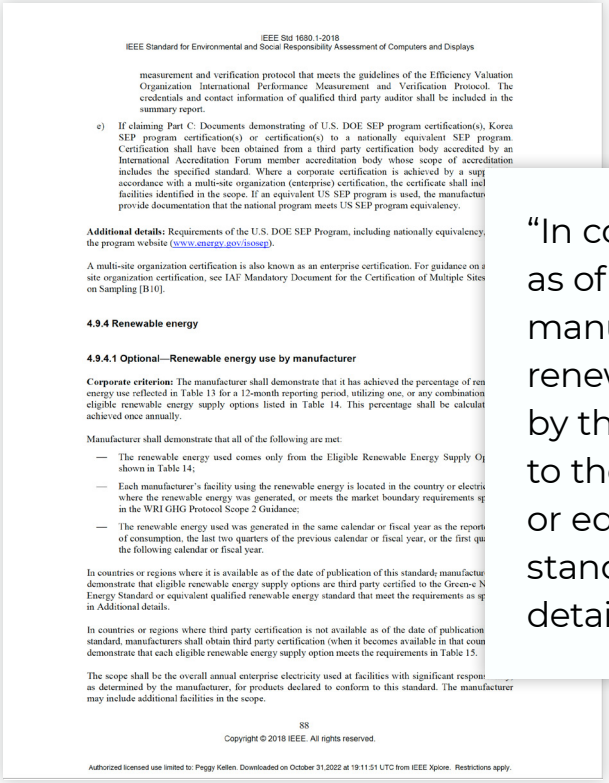
"A building that qualifies for one or more of the exceptions to Section C405.15.1 and where it can be demonstrated to the code official that the requirements of Section C405.15.2 cannot be met, the building owner shall contract for renewable electricity products complying with the **Green-e Energy** 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

- 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 certification is achieved by a sup accordance with a multi-site organization (enterprise) certification, the certificate shall incl facilities identified in the scope. If an equivalent US SEP program is used, the manufactur provide documentation that the national program meets US SEP program equivalency.

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

A multi-site organization certification is also known as an enterprise certification. For guidance on a site organization certification, see IAF Mandatory Document for the Certification of Multiple Sites 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 has achieved the percentage of ren energy use reflected in Table 13 for a 12-month reporting period, utilizing one, or any combination eligible renewable energy supply options listed in Table 14. This percentage shall be calculat achieved once annually.

Manufacturer shall demonstrate that all of the following are met:

— The renewable energy used comes only from the Eligible Renewable Energy Supply Op shown in Table 14;

— Each manufacturer's facility using the renewable energy is located in the country or electri where the renewable energy was generated, or meets the market boundary requirements sp in the WRI GHG Protocol Scope 2 Guidance;

— The renewable energy used was generated in the same calendar or fiscal year as the report of consumption, the last two quarters of the previous calendar or fiscal year, or the first qu the following calendar or fiscal year.

In countries or regions where it is available as of the date of publication of this standard; manufactur demonstrate that eligible renewable energy supply options are third party certified to the Green-e N Energy Standard or equivalent qualified renewable energy standard that meet the requirements as sp in Additional details.

In countries or regions where third party certification is not available as of the date of publication standard, manufacturers shall obtain third party certification (when it becomes available in that coun 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 respon as determined by the manufacturer, for products declared to conform to this standard. The manufacturer may include additional facilities in the scope.

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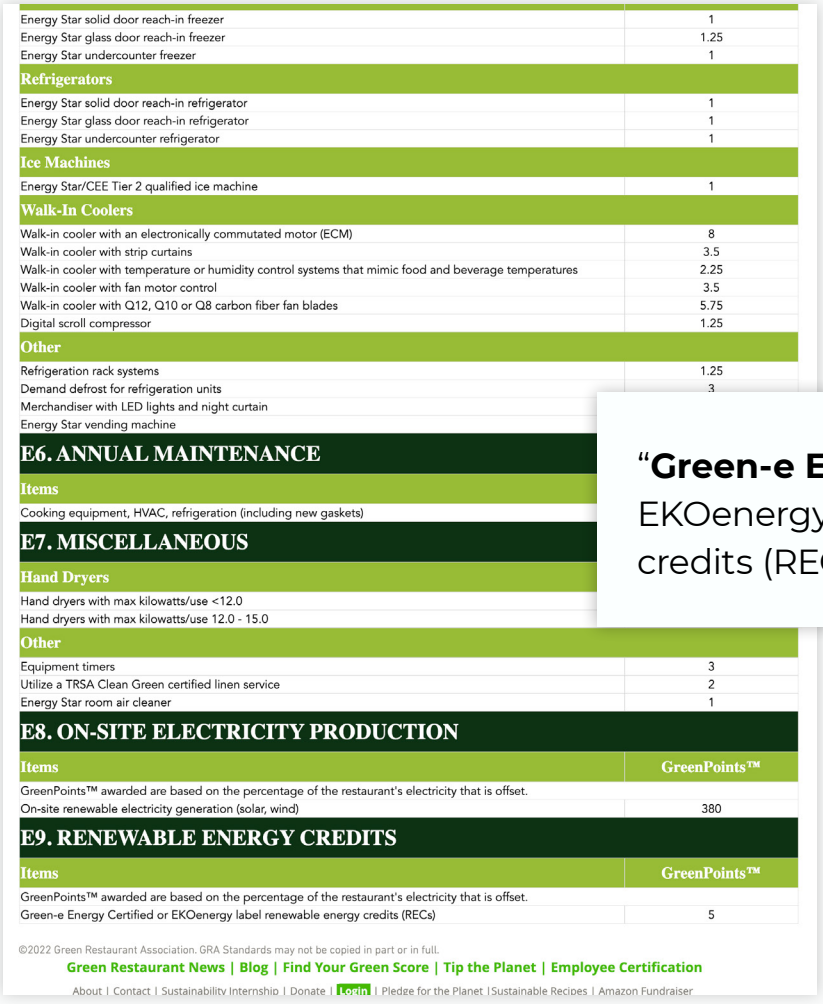
"In countries or regions where it is available as of the date of publication of this standard manufacturer shall demonstrate that eligible renewable energy supply options used by their suppliers are third party certified to the **Green-e** National Energy Standard or equivalent qualified renewable energy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

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	
Hand dryers with max kilowatts/use 12.0 - 15.0	
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

About | Contact | Sustainability Internship | Donate | Login | Pledge for the Planet | Sustainable Recipes | Amazon Fundraiser

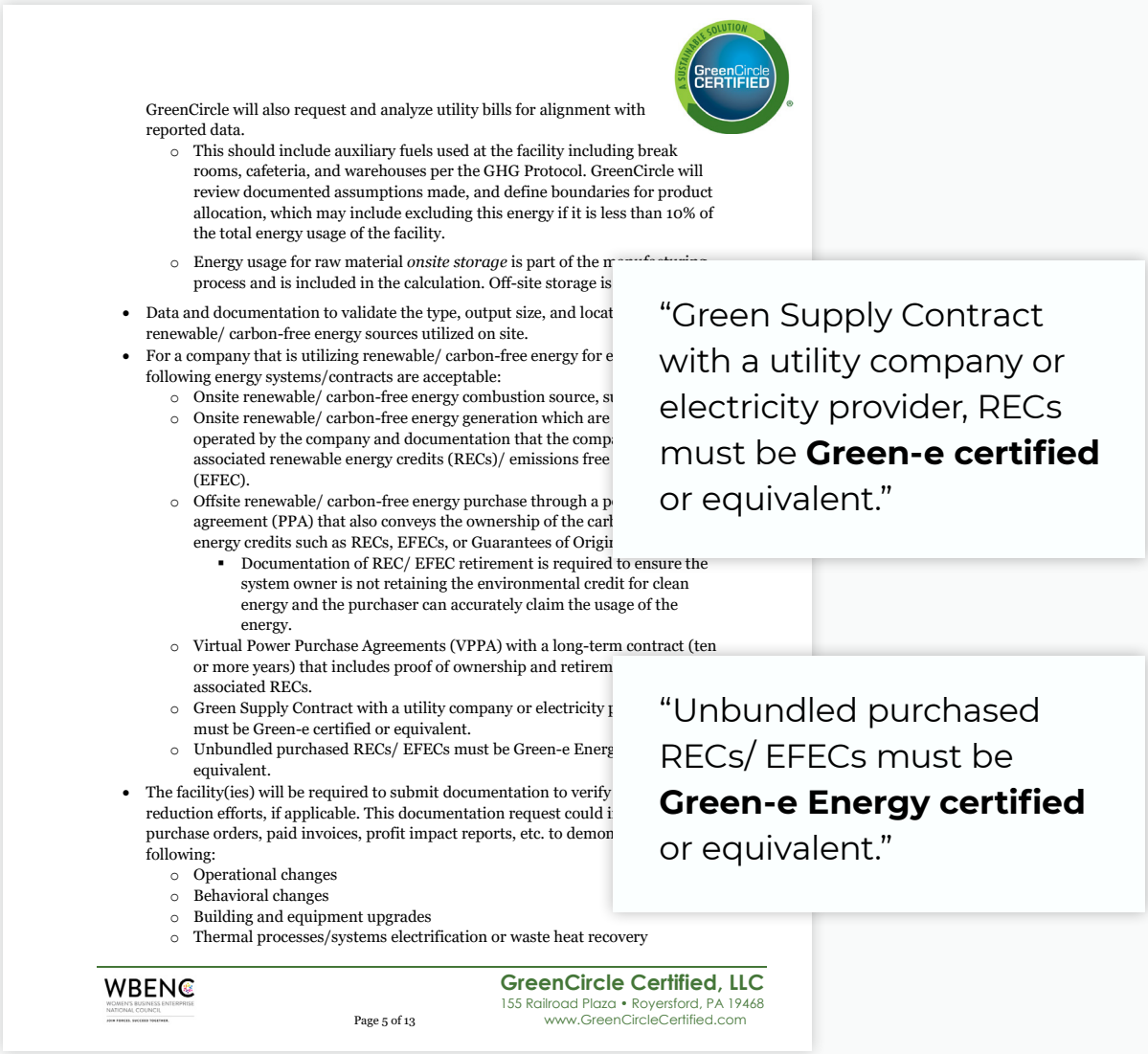
"**Green-e Energy** Certified or EKOenergy label renewable energy credits (RECs)"

GreenCircle Certified

- GreenCircle Certified provides third party certifications for environmental claims, to provide transparency in the market and increased differentiation.

GreenCircle Certified's Sustainable Energy Practices Certification

- GreenCircle's Certified's Sustainable Energy Practices Certification introduces and requires Green-e® as a certification



GreenCircle will also request and analyze utility bills for alignment with reported data.

- This should include auxiliary fuels used at the facility including break rooms, cafeteria, and warehouses per the GHG Protocol. GreenCircle will review documented assumptions made, and define boundaries for product allocation, which may include excluding this energy if it is less than 10% of the total energy usage of the facility.
- Energy usage for raw material *onsite storage* is part of the m… process and is included in the calculation. Off-site storage is…

- Data and documentation to validate the type, output size, and locat… renewable/ carbon-free energy sources utilized on site.
- For a company that is utilizing renewable/ carbon-free energy for e… following energy systems/contracts are acceptable:
  - Onsite renewable/ carbon-free energy combustion source, s…
  - Onsite renewable/ carbon-free energy generation which are … operated by the company and documentation that the comp… associated renewable energy credits (RECs)/ emissions free … (EFEC).
  - Offsite renewable/ carbon-free energy purchase through a p… agreement (PPA) that also conveys the ownership of the carb… energy credits such as RECs, EFECs, or Guarantees of Origi…
    - Documentation of REC/ EFEC retirement is required to ensure the system owner is not retaining the environmental credit for clean energy and the purchaser can accurately claim the usage of the energy.
  - Virtual Power Purchase Agreements (VPPA) with a long-term contract (ten or more years) that includes proof of ownership and retirem… associated RECs.
  - Green Supply Contract with a utility company or electricity p… must be Green-e certified or equivalent.
  - Unbundled purchased RECs/ EFECs must be Green-e Energ… equivalent.
- The facility(ies) will be required to submit documentation to verify … reduction efforts, if applicable. This documentation request could i… purchase orders, paid invoices, profit impact reports, etc. to demon… following:
  - Operational changes
  - Behavioral changes
  - Building and equipment upgrades
  - Thermal processes/systems electrification or waste heat recovery

WBENC

Page 5 of 13

GreenCircle Certified, LLC
155 Railroad Plaza • Royersford, PA 19468
www.GreenCircleCertified.com

"Green Supply Contract with a utility company or electricity provider, RECs must be **Green-e certified** or equivalent."

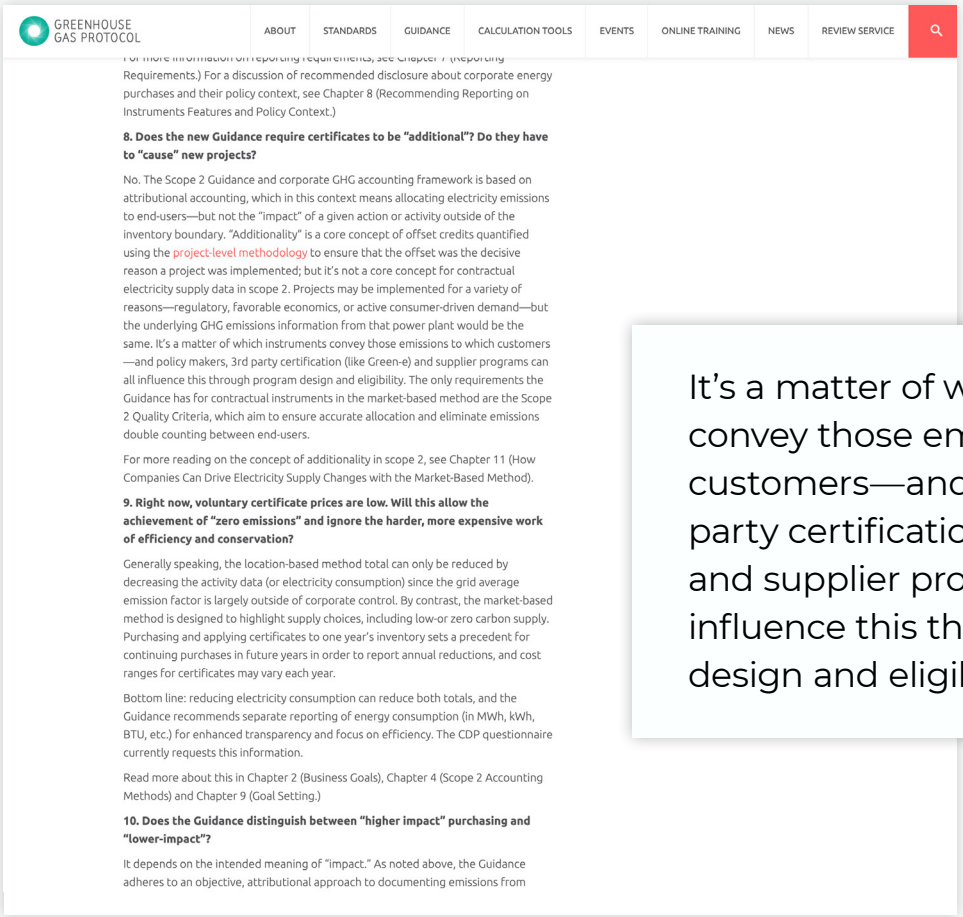
"Unbundled purchased RECs/ EFECs must be **Green-e Energy certified** or equivalent."

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"


GREENHOUSE GAS PROTOCOL

ABOUT | STANDARDS | GUIDANCE | CALCULATION TOOLS | EVENTS | ONLINE TRAINING | NEWS | REVIEW SERVICE

Requirements.) For a discussion of recommended disclosure about corporate energy purchases and their policy context, see Chapter 8 (Recommending Reporting on Instruments Features and Policy Context.)

8. Does the new Guidance require certificates to be "additional"? Do they have to "cause" new projects?

No. The Scope 2 Guidance and corporate GHG accounting framework is based on attributional accounting, which in this context means allocating electricity emissions to end-users—but not the "impact" of a given action or activity outside of the inventory boundary. "Additionality" is a core concept of offset credits quantified using the project-level methodology to ensure that the offset was the decisive reason a project was implemented; but it's not a core concept for contractual electricity supply data in scope 2. Projects may be implemented for a variety of reasons—regulatory, favorable economics, or active consumer-driven demand—but the underlying GHG emissions information from that power plant would be the same. It's a matter of which instruments convey those emissions to which customers—and policy makers, 3rd party certification (like Green-e) and supplier programs can all influence this through program design and eligibility. The only requirements the Guidance has for contractual instruments in the market-based method are the Scope 2 Quality Criteria, which aim to ensure accurate allocation and eliminate emissions double counting between end-users.

For more reading on the concept of additionality in scope 2, see Chapter 11 (How Companies Can Drive Electricity Supply Changes with the Market-Based Method).

9. Right now, voluntary certificate prices are low. Will this allow the achievement of "zero emissions" and ignore the harder, more expensive work of efficiency and conservation?

Generally speaking, the location-based method total can only be reduced by decreasing the activity data (or electricity consumption) since the grid average emission factor is largely outside of corporate control. By contrast, the market-based method is designed to highlight supply choices, including low-or zero carbon supply. Purchasing and applying certificates to one year's inventory sets a precedent for continuing purchases in future years in order to report annual reductions, and cost ranges for certificates may vary each year.

Bottom line: reducing electricity consumption can reduce both totals, and the Guidance recommends separate reporting of energy consumption (in MWh, kWh, BTU, etc.) for enhanced transparency and focus on efficiency. The CDP questionnaire currently requests this information.

Read more about this in Chapter 2 (Business Goals), Chapter 4 (Scope 2 Accounting Methods) and Chapter 9 (Goal Setting.)

10. Does the Guidance distinguish between "higher impact" purchasing and "lower-impact"?

It depends on the intended meaning of "impact." As noted above, the Guidance adheres to an objective, attributional approach to documenting emissions from

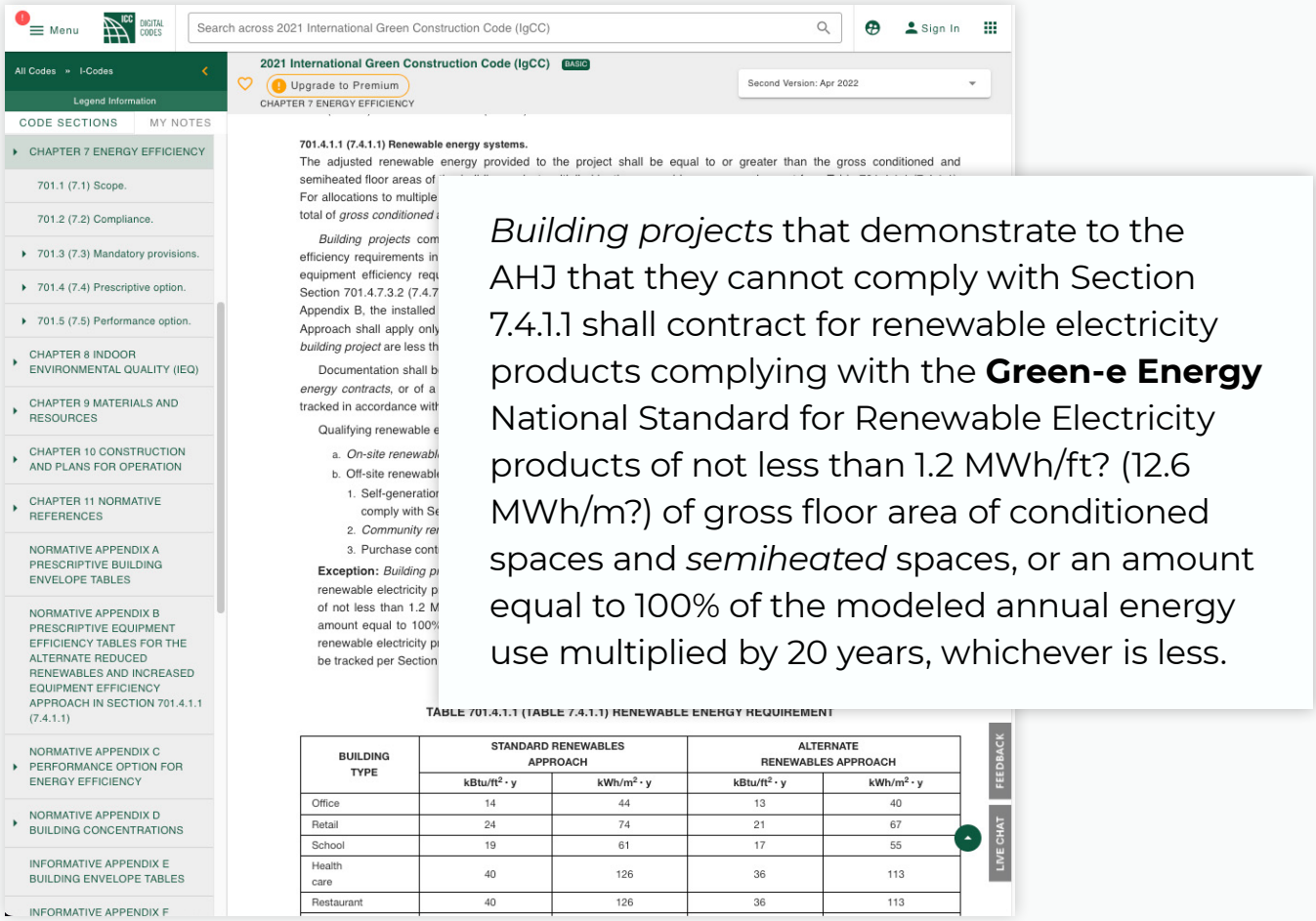
> It's a matter of which instruments convey those emissions to which customers—and policy makers, 3rd party certification (like **Green-e**) and supplier programs can all influence this through program design and eligibility.

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



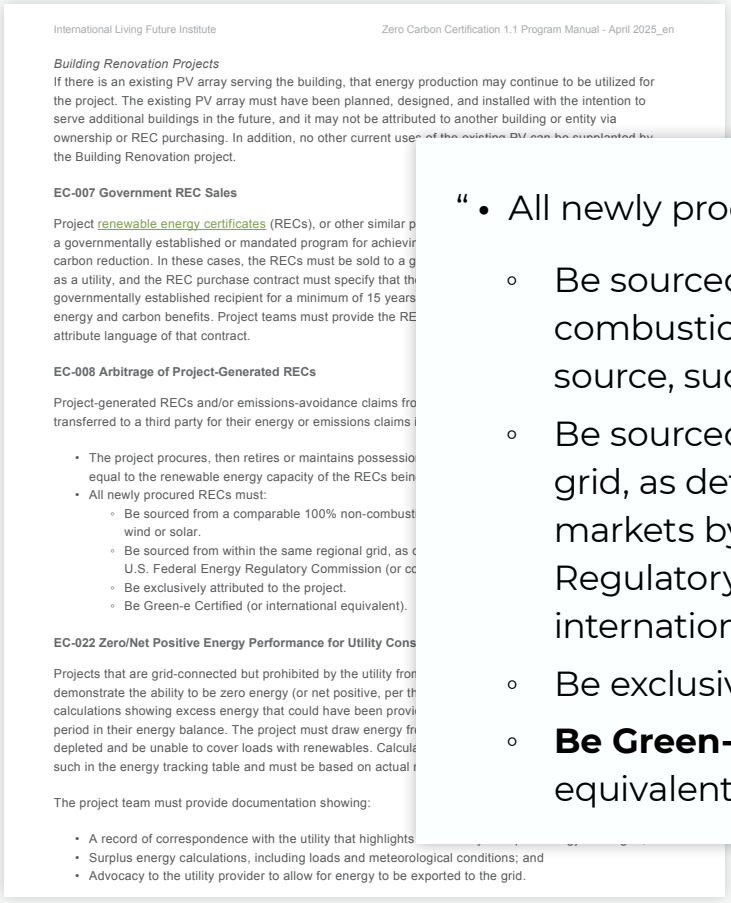
Building projects that demonstrate to the AHJ that they cannot comply with Section 7.4.1.1 shall contract for renewable electricity products complying with the **Green-e Energy** National Standard for Renewable Electricity products of not less than 1.2 MWh/ft? (12.6 MWh/m?) of gross floor area of conditioned 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 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 or renewable energy certificates, Green-e® Climate and Green-e® Energy certification (or an equivalent program) are required



International Living Future Institute Zero Carbon Certification 1.1 Program Manual - April 2025_en

Building Renovation Projects

If there is an existing PV array serving the building, that energy production may continue to be utilized for the project. The existing PV array must have been planned, designed, and installed with the intention to serve additional buildings in the future, and it may not be attributed to another building or entity via ownership or REC purchasing. In addition, no other current uses of the existing PV can be supplanted by the Building Renovation project.

EC-007 Government REC Sales

Project renewable energy certificates (RECs), or other similar p
a governmentally established or mandated program for achievir
carbon reduction. In these cases, the RECs must be sold to a g
as a utility, and the REC purchase contract must specify that th
governmentally established recipient for a minimum of 15 years
energy and carbon benefits. Project teams must provide the RE
attribute language of that contract.

EC-008 Arbitrage of Project-Generated RECs

Project-generated RECs and/or emissions-avoidance claims fro
transferred to a third party for their energy or emissions claims

- The project procures, then retires or maintains possessio
equal to the renewable energy capacity of the RECs bein
- All newly procured RECs must:
  - Be sourced from a comparable 100% non-combust
wind or solar.
  - Be sourced from within the same regional grid, as
U.S. Federal Energy Regulatory Commission (or c
  - Be exclusively attributed to the project.
  - Be Green-e Certified (or international equivalent).

EC-022 Zero/Net Positive Energy Performance for Utility Cons

Projects that are grid-connected but prohibited by the utility fron
demonstrate the ability to be zero energy (or net positive, per th
calculations showing excess energy that could have been provi
period in their energy balance. The project must draw energy fr
depleted and be unable to cover loads with renewables. Calcula
such in the energy tracking table and must be based on actual

The project team must provide documentation showing:

- A record of correspondence with the utility that highlights
- Surplus energy calculations, including loads and meteorological conditions; and
- Advocacy to the utility provider to allow for energy to be exported to the grid.

"

- All newly procured RECs must:
  - Be sourced from a comparable 100% non-combustion based renewable energy source, such as wind or solar.
  - Be sourced from within the same regional grid, as defined by the electric power markets by the U.S. Federal Energy Regulatory Commission (or comparable international authority).
  - Be exclusively attributed to the project.
  - **Be Green-e Certified** (or international equivalent)."

LIVING BUILDING CHALLENGE

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 bene
embodied carbon quantity calculations. Projects with calc
sequestering value based on their materials are not requi

Approved Carbon Offsets
Carbon offsets must be certified by Green-e Climate or a
leakage prevention, permanence, and audited verificatior
Verified Emission Reduction (VER) carbon credits are su
(RECs) are not acceptable alternatives for carbon offsets

Green-e certified carbon offsets must meet Gold Standar
Reserve requirements for third-party verification. Green-e approved projects can be found here. Other certification programs or verification standards must be submitted as 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."

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.

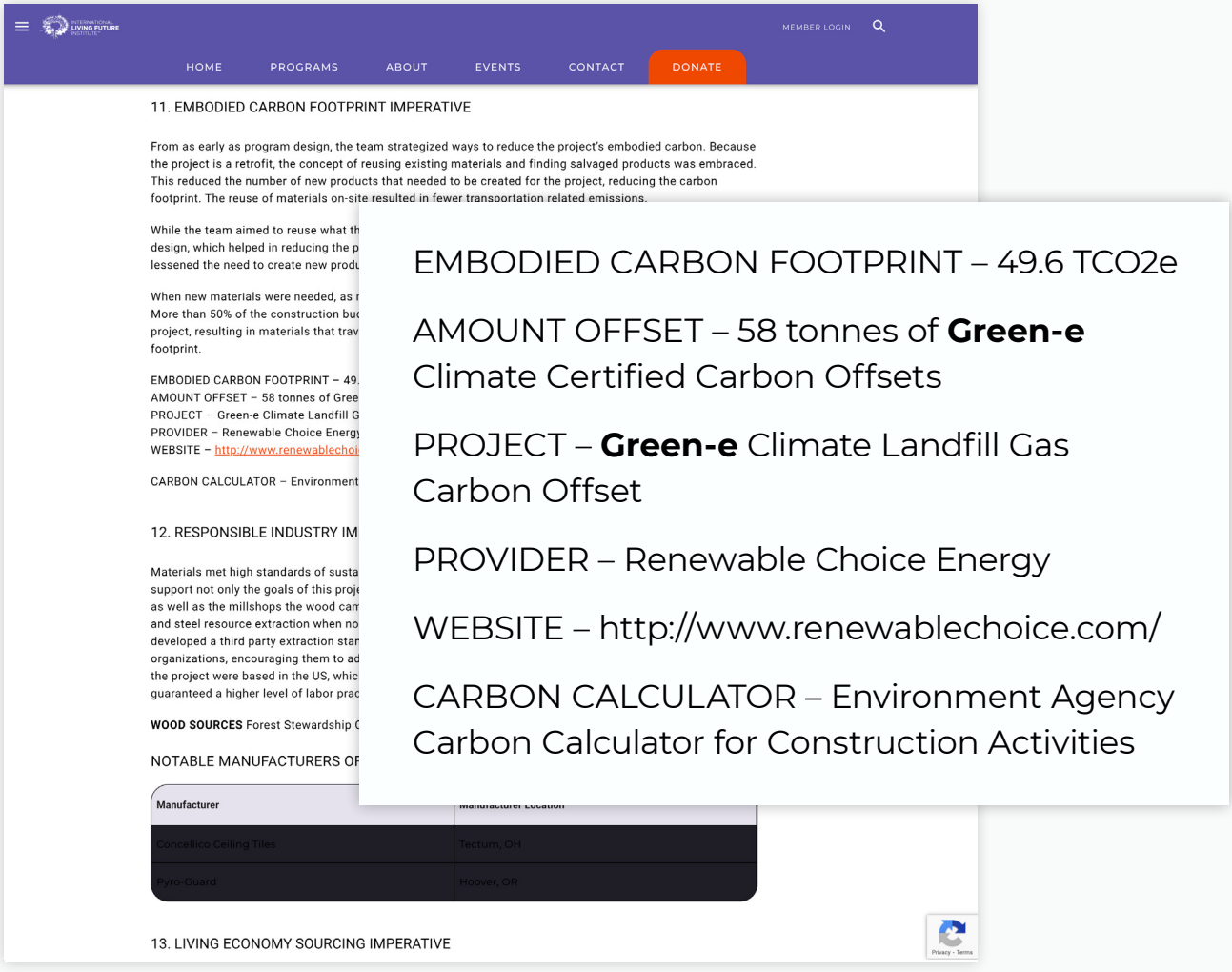
Carbon offsets may be sourced from any location in the world; consideration of local or community-based solutions is encouraged, but not required. Consideration of carbon offsets with additional ecological, cultural, human health, or equity benefits is also encouraged, but not required.

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.

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



EMBODIED CARBON FOOTPRINT – 49.6 TCO2e

AMOUNT OFFSET – 58 tonnes of **Green-e** Climate Certified Carbon Offsets

PROJECT – **Green-e** Climate Landfill Gas Carbon Offset

PROVIDER – Renewable Choice Energy

WEBSITE – http://www.renewablechoice.com/

CARBON CALCULATOR – Environment Agency Carbon Calculator for Construction Activities

RE100

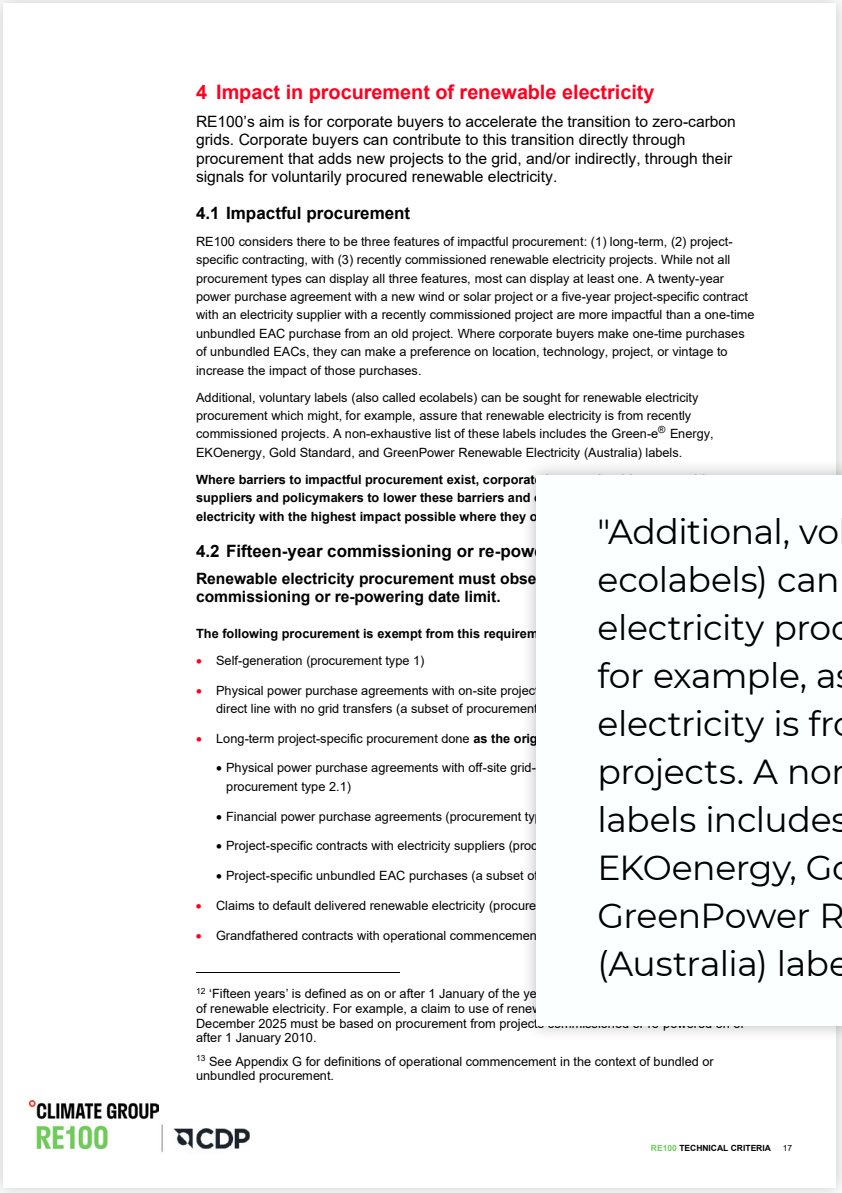
About RE100

- 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



4 Impact in procurement of renewable electricity

RE100's aim is for corporate buyers to accelerate the transition to zero-carbon grids. Corporate buyers can contribute to this transition directly through procurement that adds new projects to the grid, and/or indirectly, through their signals for voluntarily procured renewable electricity.

4.1 Impactful procurement

RE100 considers there to be three features of impactful procurement: (1) long-term, (2) project-specific contracting, with (3) recently commissioned renewable electricity projects. While not all procurement types can display all three features, most can display at least one. A twenty-year power purchase agreement with a new wind or solar project or a five-year project-specific contract with an electricity supplier with a recently commissioned project are more impactful than a one-time unbundled EAC purchase from an old project. Where corporate buyers make one-time purchases of unbundled EACs, they can make a preference on location, technology, project, or vintage to increase the impact of those purchases.

Additional, voluntary labels (also called ecolabels) can be sought for renewable electricity procurement which might, for example, assure that renewable electricity is from recently commissioned projects. A non-exhaustive list of these labels includes the Green-e® Energy, EKOenergy, Gold Standard, and GreenPower Renewable Electricity (Australia) labels.

Where barriers to impactful procurement exist, corporat
suppliers and policymakers to lower these barriers and
electricity with the highest impact possible where they

4.2 Fifteen-year commissioning or re-pow

Renewable electricity procurement must obse
commissioning or re-powering date limit.

The following procurement is exempt from this requirem

- Self-generation (procurement type 1)
- Physical power purchase agreements with on-site projec
  direct line with no grid transfers (a subset of procurement
- Long-term project-specific procurement done **as the orig**
  - Physical power purchase agreements with off-site grid-
    procurement type 2.1)
  - Financial power purchase agreements (procurement ty
  - Project-specific contracts with electricity suppliers (proc
  - Project-specific unbundled EAC purchases (a subset o
- Claims to default delivered renewable electricity (procure
- Grandfathered contracts with operational commencemen

[12] 'Fifteen years' is defined as on or after 1 January of the ye
of renewable electricity. For example, a claim to use of renew
December 2025 must be based on procurement from projects
after 1 January 2010.

[13] See Appendix G for definitions of operational commencement in the context of bundled or unbundled procurement.

CLIMATE GROUP RE100 | CDP

RE100 TECHNICAL CRITERIA 17

"Additional, voluntary labels (also called ecolabels) can be sought for renewable electricity procurement which might, for example, assure that renewable electricity is from recently commissioned projects. A non-exhaustive list of these labels includes the **Green-e® Energy**, EKOenergy, Gold Standard, and GreenPower Renewable Electricity (Australia) labels."

RE100

Corporate buyers may allocate 15% of their total electricity consumption to procurement from projects older than fifteen years old and that is not covered by an above exemption.

In other words, if a corporate buyer is only procuring 15% renewable electricity, no procurement is subject to the commissioning or re-powering date limit. A corporate buyer procuring 50% renewable electricity may exempt 15% (in terms of its total consumption) and must subject the remainder of its procurement of renewable electricity (35% of its total consumption) to the requirements above. A corporate buyer procuring 100% renewable electricity may exempt 15% of its procurement and must subject the remainder of its procurement (85% of its total consumption) to the requirements above[14].

The RE100 technical criteria do not recognize additional procurement of renewable electricity from projects commissioned or re-powered more than fifteen years ago beyond the 15% threshold.

These requirements apply to corporate buyers' global procurement. Corporate buyers may choose in which markets to use the procurement types subject to the 15% threshold. RE100 recommends that corporate buyers voluntarily phase out their use of the 15% threshold as quickly as possible.

4.2.1 Approaches to reporting on commissioning years

For some procurement, it can be difficult to establish precisely which projects renewable attributes are being sourced from. This may be especially true for retail contracts with suppliers with low transparency regarding the energy attributes they convey. Corporate buyers should insist that their suppliers improve the transparency of such
powering dates as a selection criterion whe

Some supplies may be transparent with res
many projects (even when the supplies are
to individually report each project and the v
companies should report in as much detail
wish to disaggregate their reporting by com
commissioning or re-powering date of the o

If a commissioning or re-powering date is u
towards the 15% threshold which is exempt

4.2.2 Additional, voluntary labels commissioning or re-powering date limit

RE100 is aware of some ecolabels (see page 17) that include a fifteen-year commissioning or re-powering date limit. These labels simplify a corporate buyer's efforts to know that it has purchased renewable electricity that meets the RE100 commissioning or re-powering date limit, without having to determine and disclose a commissioning or re-powering year.

These labels include:

- Green-e® Energy purchased in the United States, Canada, Chile, Singapore and Taiwan, China.
- GreenPower Renewable Electricity, an ecolabel available in Australia.

4.2.3 Understanding the exemption for long-term, project-specific procurement done as the original off-taker

The purpose of the exemption for long-term, project-specific procurement done as the original off-taker from the commissioning or re-powering date limit is to recognize that some corporate buyers sign long-term agreements extending past fifteen years with new projects that are necessary for the

[14] See Appendix E for an illustration of how this rule impacts corporate buyers procuring different amounts of renewable electricity.

CLIMATE GROUP RE100 | CDP

"These labels include:

- **Green-e® Energy** purchased in the United States, Canada, Chile, Singapore and Taiwan, China."

RE100

RE100 FAQ

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

50. Does RE100 still recognize claims to use of renewable electricity made using I-RECs China?

Following a policy announcement made by the Chinese National Energy Administration in 2024, I-RECs will no longer be issued for renewable electricity generated beyond 21 December 2024 in China. RE100 will continue to recognize claims made using I-RECs with vintages before 2025.

51. What about Peace Renewable Energy Credits (P-RECs)?

Peace RECs are issued under the I-REC Standard (they are I-RECs) by authorized I-REC issuer Energy Peace Partners. They are more strongly associated with impact because the revenues from their sales are directed towards funding first-time electrification projects in fragile, energy poor regions where renewable energy investment has been limited. They can currently be issued in Chad, the Democratic Republic of Congo, Ethiopia, Haiti, Somalia, and South Sudan as well as Nigeria and Uganda, with more P-REC-issuing countries expected to be added. Companies can use P-RECs issued in the country they operate in to claim use of renewable electricity. To RE100, they are viewed as an 'additional, voluntary label' associated with renewable electricity purchasing (see Section Five in the RE100 technical criteria). RE100 companies buying P-RECs in a way that meets the RE100 technical criteria (e.g. market boundaries) receive additional recognition from RE100.

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

RE100 is not resourced or organized to evaluate EAC systems or specific products. If there is an EAC system you wish to use that does not appear in the list above, use the RE100 credible claims paper to assess its suitability.

53. 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 recogn
GHG inventory reporting systems to ensure that the vintage of generation d
advance or after consumption.

The Green-e® standard has a 21-month vintage requirement which RE100
reasonable practice. The requirement states that a given twelve-month repo
electricity consumption can use vintages of renewable electricity from the si
reporting period, the twelve months of the reporting period, or the three mor
period.

**54. Can Energy Attribute Certificates (EACs) be used t
generated and consumed from a Combined Heat a
plant?**

In almost all cases, no. RE100 asks that you consider whether the emissions from the CHP plant are in Scope 1 or Scope 2 of your organization, whether the CHP plant is located on-site or off-site, and, if off-site, whether the electricity from the CHP is being sourced through a direct line or a grid transfer. These factors determine whether it is credible to use EACs to decarbonize electricity sourced from CHP which is using fossil fuels.

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 (e.g., through a direct line).

CLIMATE GROUP RE100 | CDP

RE100 Technical FAQs 14

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

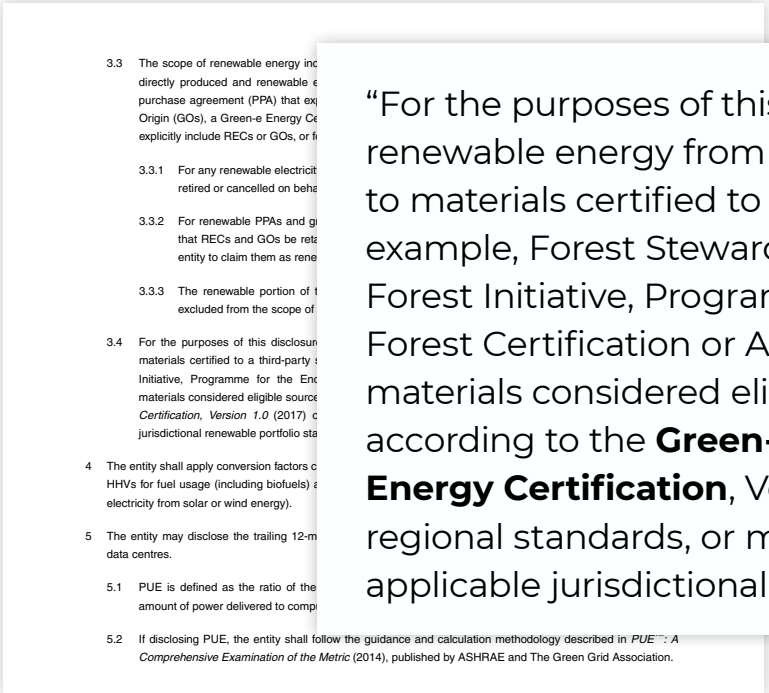
Sustainability Accounting Standards Board (SASB)

- "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 renewable energy inc
directly produced and renewable e
purchase agreement (PPA) that ex
Origin (GOs), a Green-e Energy Ce
explicitly include RECs or GOs, or f

3.3.1 For any renewable electricit
retired or cancelled on beha

3.3.2 For renewable PPAs and gr
that RECs and GOs be reta
entity to claim them as rene

3.3.3 The renewable portion of t
excluded from the scope of

3.4 For the purposes of this disclosur
materials certified to a third-party s
Initiative, Programme for the End
materials considered eligible source
Certification, Version 1.0 (2017) c
jurisdictional renewable portfolio sta

4 The entity shall apply conversion factors c
HHVs for fuel usage (including biofuels) a
electricity from solar or wind energy).

5 The entity may disclose the trailing 12-m
data centres.

5.1 PUE is defined as the ratio of the
amount of power delivered to compu

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.

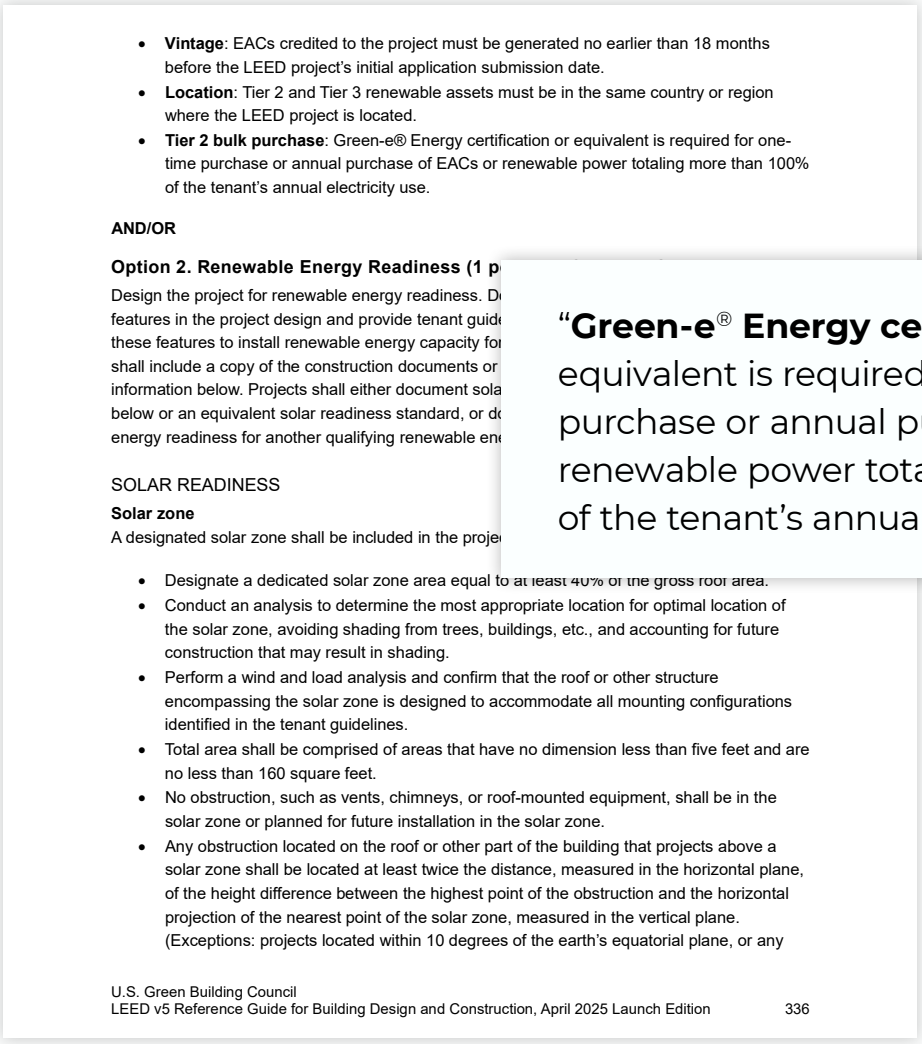
"For the purposes of this disclosure, the scope of renewable energy from biomass sources is limited to materials certified to a third-party standard (for example, Forest Stewardship Council, Sustainable Forest Initiative, Programme for the Endorsement of Forest Certification or American Tree Farm System), 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 v5 Reference Guide: Building Design and Construction

- LEED V5's "Reference Guide: Building and Design" references Green-e® Energy and Greene-e® Renewable Fuels.
- Green-e® Energy and Green-e® Renewable Fuels certification if required for the purchase of related EAC



- **Vintage**: EACs credited to the project must be generated no earlier than 18 months before the LEED project's initial application submission date.
- **Location**: Tier 2 and Tier 3 renewable assets must be in the same country or region where the LEED project is located.
- **Tier 2 bulk purchase**: Green-e® Energy certification or equivalent is required for one-time purchase or annual purchase of EACs or renewable power totaling more than 100% of the tenant's annual electricity use.

AND/OR

Option 2. Renewable Energy Readiness (1 p

Design the project for renewable energy readiness. D
features in the project design and provide tenant guid
these features to install renewable energy capacity fo
shall include a copy of the construction documents or
information below. Projects shall either document sola
below or an equivalent solar readiness standard, or d
energy readiness for another qualifying renewable en

SOLAR READINESS

Solar zone

A designated solar zone shall be included in the proje

- Designate a dedicated solar zone area equal to at least 40% of the gross roof area.
- Conduct an analysis to determine the most appropriate location for optimal location of the solar zone, avoiding shading from trees, buildings, etc., and accounting for future construction that may result in shading.
- Perform a wind and load analysis and confirm that the roof or other structure encompassing the solar zone is designed to accommodate all mounting configurations identified in the tenant guidelines.
- Total area shall be comprised of areas that have no dimension less than five feet and are no less than 160 square feet.
- No obstruction, such as vents, chimneys, or roof-mounted equipment, shall be in the solar zone or planned for future installation in the solar zone.
- Any obstruction located on the roof or other part of the building that projects above a solar zone shall be located at least twice the distance, measured in the horizontal plane, of the height difference between the highest point of the obstruction and the horizontal projection of the nearest point of the solar zone, measured in the vertical plane. (Exceptions: projects located within 10 degrees of the earth's equatorial plane, or any

U.S. Green Building Council
LEED v5 Reference Guide for Building Design and Construction, April 2025 Launch Edition 336

"**Green-e® Energy certification or** equivalent is required for one time purchase or annual purchase of EACs or renewable power totaling more than 100% of the tenant's annual electricity use."

Additional considerations: Geoexchange systems ineligible
Geoexchange systems such as geothermal heat pumps that use vapor compression cycles are not considered a renewable energy resource. These systems are credited in *EAc3: Enhanced Energy Efficiency.*

Eligible Tier 3 Renewable Fuel Resource Types

For any fuel used on the project site or for district heating, the project may procure renewable fuel that is Green-e® certified or equivalent. The Green-e® renewable fuels standard certifies biomethane—also called renewable natural gas (RNG) — that meets specific production facility and feedstock criteria and is purified to meet gas pipeline specifications.

Annual Site Energy Determination (For Tier 1, Tier 2, and Tier 3 Percent of Annual Site Energy)

For New Construction, annual site energy refers to the total building annual site energy use including electricity, on-site fuel use, and district thermal energy. This includes all regulated and unregulated energy use.

Exclusion of energy for electric vehicle charging
Exclude energy for electric vehicle charging of vehicles used for off-site transportation purposes if this electric vehicle supply equipment (EVSE) is separately metered from the main building energy use.

Renewable energy procurement may be contractually
metered data for each project energy source, summing
annual site energy claimed for the project, or annual si
project.

ANNUAL SITE ENERGY ESTIMATION: ENER
Projects using energy modeling to demonstrate
Efficiency must use the proposed building perfo
energy credit as the basis for annual site energ

- For projects referencing the *ASHRAE 90.1*, Appendix G Performance Rating Method (PRM), use the site energy consumption for the proposed building performance (PBP) without any credit for the on-site renewable energy contribution.
- For projects referencing the *ASHRAE 90.1*, Energy Cost Budget Method (ECB), use the site energy consumption for the proposed design without any credit for the on-site renewable energy contribution.

"For any fuel used on the project site or for district heating, the project may procure **renewable fuel that is Green-e® certified** or equivalent."

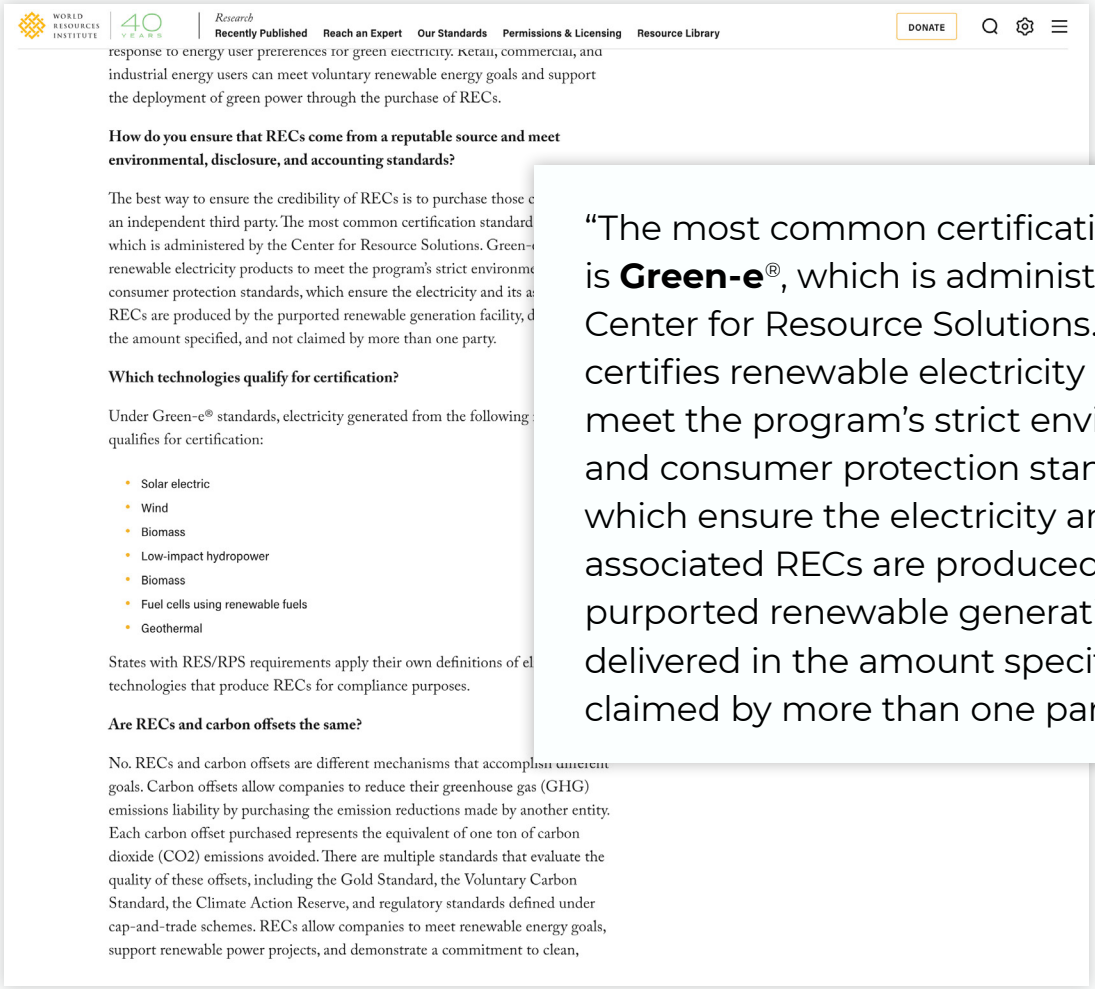
WORLD RESOURCES INSTITUTE

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®



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response to energy user preferences for green electricity. Retail, commercial, and industrial energy users can meet voluntary renewable energy goals and support the deployment of green power through the purchase of RECs.

How do you ensure that RECs come from a reputable source and meet environmental, disclosure, and accounting standards?

The best way to ensure the credibility of RECs is to purchase those c
an independent third party. The most common certification standard
which is administered by the Center for Resource Solutions. Green-
renewable electricity products to meet the program's strict environme
consumer protection standards, which ensure the electricity and its a
RECs are produced by the purported renewable generation facility, d
the amount specified, and not claimed by more than one party.

Which technologies qualify for certification?

Under Green-e® standards, electricity generated from the following
qualifies for certification:

- Solar electric
- Wind
- Biomass
- Low-impact hydropower
- Biomass
- Fuel cells using renewable fuels
- Geothermal

States with RES/RPS requirements apply their own definitions of el
technologies that produce RECs for compliance purposes.

Are RECs and carbon offsets the same?

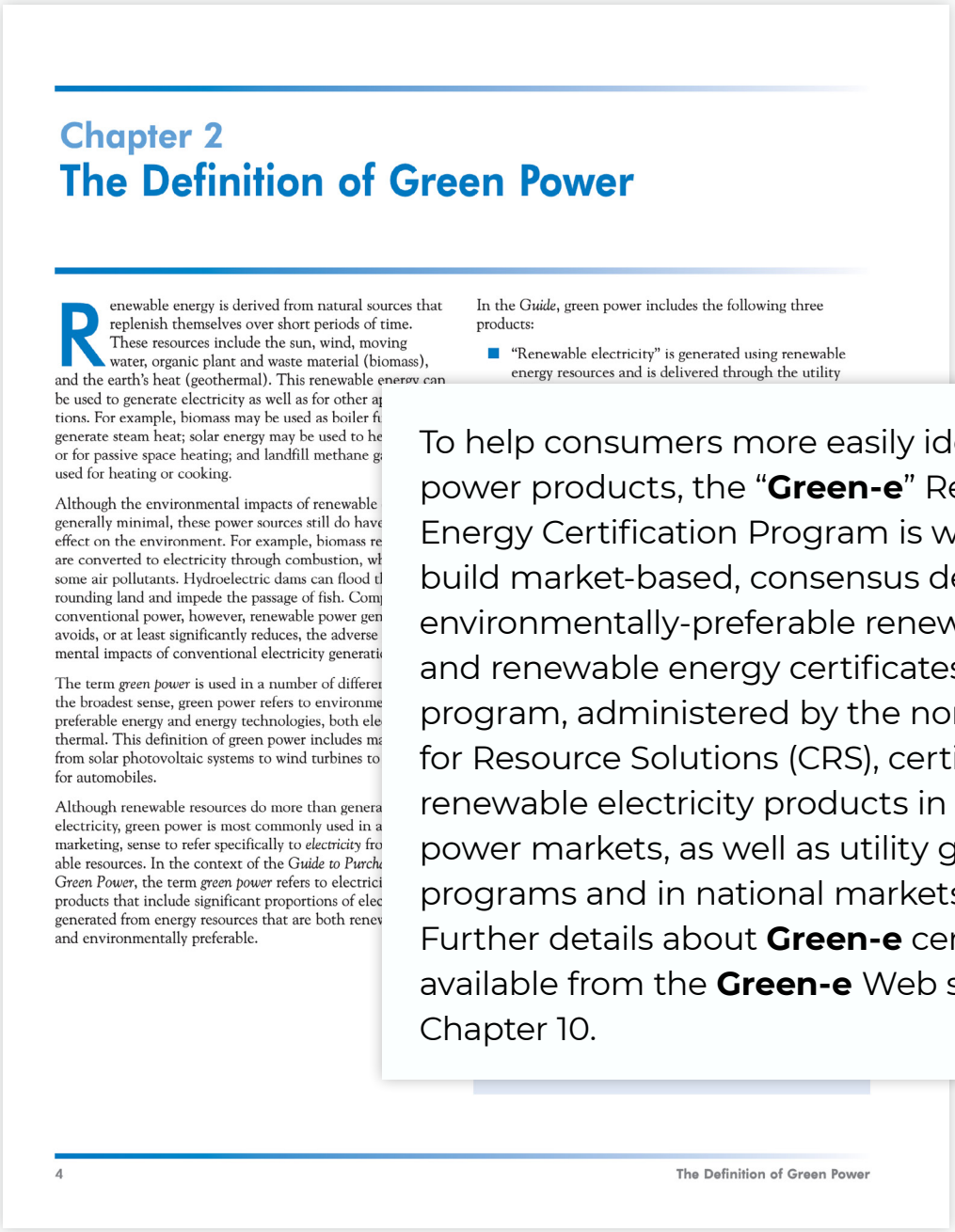
No. RECs and carbon offsets are different mechanisms that accomplish different goals. Carbon offsets allow companies to reduce their greenhouse gas (GHG) emissions liability by purchasing the emission reductions made by another entity. Each carbon offset purchased represents the equivalent of one ton of carbon dioxide (CO2) emissions avoided. There are multiple standards that evaluate the quality of these offsets, including the Gold Standard, the Voluntary Carbon Standard, the Climate Action Reserve, and regulatory standards defined under cap-and-trade schemes. RECs allow companies to meet renewable energy goals, support renewable power projects, and demonstrate a commitment to clean,

> "The most common certification standard is **Green-e®**, which is administered by the Center for Resource Solutions. **Green-e®** certifies renewable electricity products to meet the program's strict environmental and consumer protection standards, which ensure the electricity and its associated RECs are produced by the purported renewable generation facility, delivered in the amount specified, and not claimed by more than one party."

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 ap tions. For example, biomass may be used as boiler fu generate steam heat; solar energy may be used to he or for passive space heating; and landfill methane ga used for heating or cooking.

Although the environmental impacts of renewable generally minimal, these power sources still do have effect on the environment. For example, biomass re are converted to electricity through combustion, wh some air pollutants. Hydroelectric dams can flood th rounding land and impede the passage of fish. Comp conventional power, however, renewable power gen avoids, or at least significantly reduces, the adverse mental impacts of conventional electricity generati

The term *green power* is used in a number of differen the broadest sense, green power refers to environme preferable energy and energy technologies, both ele thermal. This definition of green power includes ma from solar photovoltaic systems to wind turbines to for automobiles.

Although renewable resources do more than genera electricity, green power is most commonly used in a marketing, sense to refer specifically to *electricity* fro able resources. In the context of the *Guide to Purcha Green Power*, the term *green power* refers to electrici products that include significant proportions of elec generated from energy resources that are both renew 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.

Green-e® U.S./Canada Citations

CAGBC | Canada Green Building Council

MeetGreen®

NREL

NRDC
NATURAL RESOURCES DEFENSE COUNCIL

SUSTAINABLE PURCHASING LEADERSHIP COUNCIL

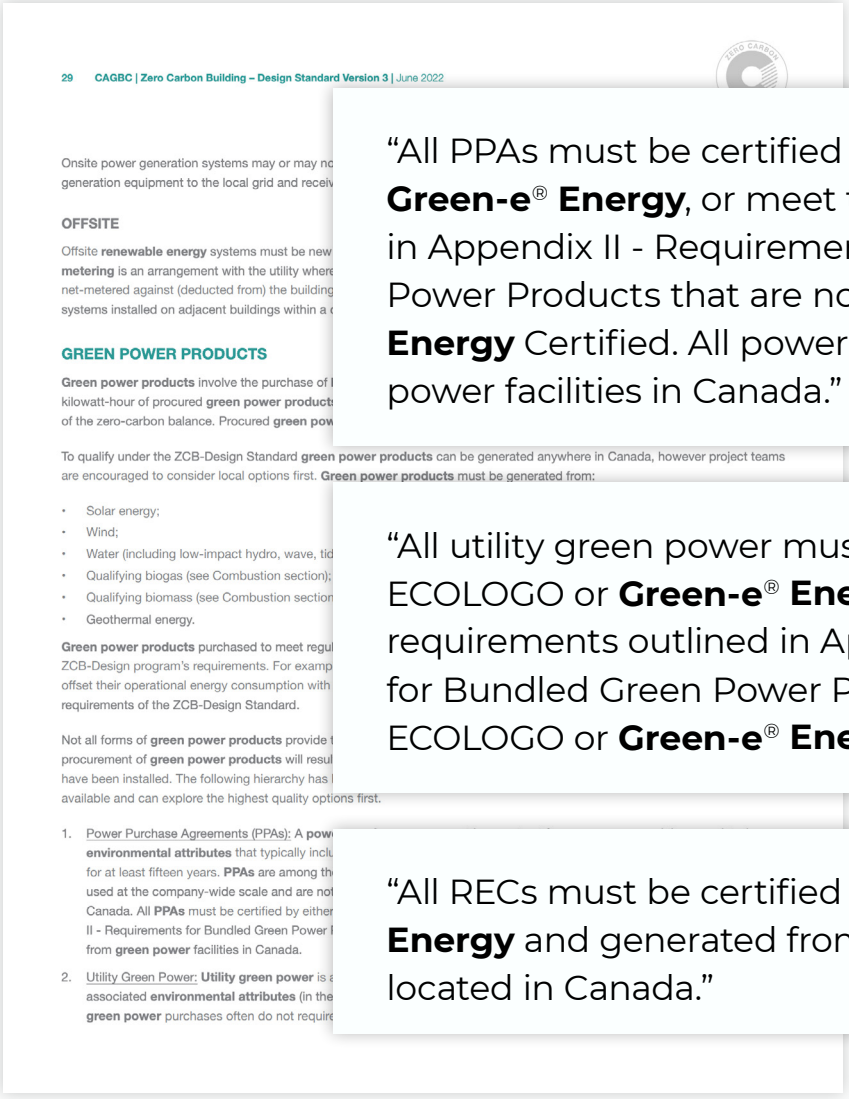
CAGBC | Canada Green Building Council

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 systems may or may nc
generation equipment to the local grid and receiv

OFFSITE

Offsite **renewable energy** systems must be new
metering is an arrangement with the utility where
net-metered against (deducted from) the building
systems installed on adjacent buildings within a

GREEN POWER PRODUCTS

Green power products involve the purchase of
kilowatt-hour of procured **green power product**
of the zero-carbon balance. Procured **green pow**

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-impact hydro, wave, tid
- Qualifying biogas (see Combustion section);
- Qualifying biomass (see Combustion section
- Geothermal energy.

Green power products purchased to meet regul
ZCB-Design program's requirements. For examp
offset their operational energy consumption with
requirements of the ZCB-Design Standard.

Not all forms of **green power products** provide t
procurement of **green power products** will resul
have been installed. The following hierarchy has
available and can explore the highest quality options first.

1. Power Purchase Agreements (PPAs): A **pow**
environmental attributes that typically inclu
for at least fifteen years. **PPAs** are among th
used at the company-wide scale and are not
Canada. All **PPAs** must be certified by either
II - Requirements for Bundled Green Power
from **green power** facilities in Canada.
2. Utility Green Power: **Utility green power** is
associated **environmental attributes** (in the
green power purchases often do not require

"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."

CAGBC | Canada Green Building Council

AVOIDED EMISSIONS FROM CARBON OFFSETS

'Avoided Emissions from **Carbon Offsets**' refers to the emissions that are avoided by purchasing high-quality **carbon offsets**, which can be used to offset **direct** or **indirect emissions** on a per tonne basis. High-quality **carbon offsets** ensure that offset projects include safeguards related to:

- **Additionality:** The likelihood that the emissions reductions would not have happened anyway.
- Permanence: The likelihood that the emissions removed will not be returned to the atmosphere at a later date (for example, a commitment to maintain a forest could be repealed).
- Leakage: The risk that emissions reductions will result in increased emissions elsewhere (for example designating a forest as protected without precautions to prevent increased deforestation in unprotected areas).

To qualify under the ZCB-Design Standard, **carbon offsets** must meet one of the following criteria:

- Certified by by Green-e® Climate or equivalent; and/or
- Derived from **carbon offset** projects certified under one of the following high-quality international programs:
    - Gold Standard
    - Verified Carbon Standard (VCS)
    - The Climate Action Reserve
    - American Carbon Registry
- Sourced from Canadian provincial or federal carbon offse
    - BC Carbon Registry
    - Alberta Emission Offset System
    - Canada's Greenhouse Gas Offset Credit Systen

While Green-e® Climate certified carbon offsets provide the hi
to ensure a diverse selection of offset project types and geographical locations are available.

Offsets may come from anywhere in the world and any project type that meets the requirements of the programs listed above. Project teams may choose to apply their own criteria when deciding on the selection of **carbon offsets**.

Carbon offsets purchased to meet regulatory programs may also contribute provided they meet the program requirements. For example, where a building is in a municipality or province that requires buildings to offset their carbon emissions with the purchase of **carbon offsets**, these purchases can also be used to meet the requirements of the ZCB-Design Standard.

ZCB-Design certification requires at least one price quote for the annual volume of **carbon offsets** anticipated to be required. **Carbon offset** purchases are verified for ZCB-Performance certification.

To qualify under the ZCB-Design Standard, carbon offsets must meet one of the following criteria:

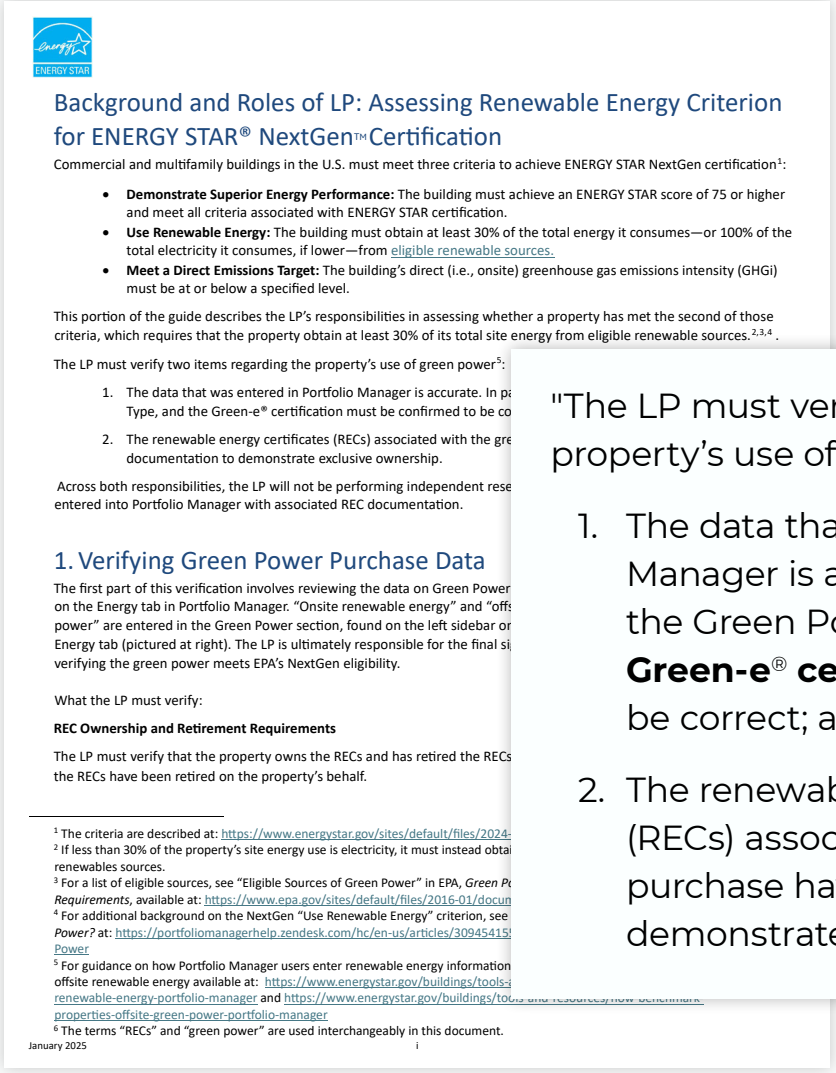
- Certified by **Green-e® Climate** or equivalent

Energy Star

- Energy Star is a program jointly run by the Environmental Protection Agency and the Department of Energy that certifies and promotes energy-efficient products, buildings and industrial plants.

ENERGY STAR® NextGen™ Certification Verification Instructions for Renewable Energy

- The ENERGY STAR® NextGen™ Certification Verification certifies the use of renewable energy for commercial and multifamily buildings in the United States
- The certification requires Green-e® certified products for some types of Renewable energy procurement



ENERGY STAR

Background and Roles of LP: Assessing Renewable Energy Criterion for ENERGY STAR® NextGen™ Certification

Commercial and multifamily buildings in the U.S. must meet three criteria to achieve ENERGY STAR NextGen certification[1]:

- **Demonstrate Superior Energy Performance:** The building must achieve an ENERGY STAR score of 75 or higher and meet all criteria associated with ENERGY STAR certification.
- **Use Renewable Energy:** The building must obtain at least 30% of the total energy it consumes—or 100% of the total electricity it consumes, if lower—from eligible renewable sources.
- **Meet a Direct Emissions Target:** The building's direct (i.e., onsite) greenhouse gas emissions intensity (GHGi) must be at or below a specified level.

This portion of the guide describes the LP's responsibilities in assessing whether a property has met the second of those criteria, which requires that the property obtain at least 30% of its total site energy from eligible renewable sources.[2,3,4] .

The LP must verify two items regarding the property's use of green power[5]:

1. The data that was entered in Portfolio Manager is accurate. In pa
   Type, and the Green-e® certification must be confirmed to be co
2. The renewable energy certificates (RECs) associated with the gre
   documentation to demonstrate exclusive ownership.

Across both responsibilities, the LP will not be performing independent rese
entered into Portfolio Manager with associated REC documentation.

1. Verifying Green Power Purchase Data

The first part of this verification involves reviewing the data on Green Power
on the Energy tab in Portfolio Manager. "Onsite renewable energy" and "offs
power" are entered in the Green Power section, found on the left sidebar or
Energy tab (pictured at right). The LP is ultimately responsible for the final si
verifying the green power meets EPA's NextGen eligibility.

What the LP must verify:

REC Ownership and Retirement Requirements

The LP must verify that the property owns the RECs and has retired the RECs
the RECs have been retired on the property's behalf.

[1] The criteria are described at: https://www.energystar.gov/sites/default/files/2024-
[2] If less than 30% of the property's site energy use is electricity, it must instead obta
renewables sources.
[3] For a list of eligible sources, see "Eligible Sources of Green Power" in EPA, *Green Po*
Requirements, available at: https://www.epa.gov/sites/default/files/2016-01/docun
[4] For additional background on the NextGen "Use Renewable Energy" criterion, see
Power? at: https://portfoliomanagerhelp.zendesk.com/hc/en-us/articles/30945415
Power
[5] For guidance on how Portfolio Manager users enter renewable energy information
offsite renewable energy available at: https://www.energystar.gov/buildings/tools-
renewable-energy-portfolio-manager and https://www.energystar.gov/buildings/tools-and-resources/how-benchmark-
properties-offsite-green-power-portfolio-manager
[6] The terms "RECs" and "green power" are used interchangeably in this document.

January 2025 i

"The LP must verify two items regarding the property's use of green power:

1. The data that was entered in Portfolio Manager is accurate. In particular, the dates, the Green Power Product Type, and the **Green-e® certification** must be confirmed to be correct; and
2. The renewable energy certificates (RECs) associated with the green power purchase have adequate documentation to demonstrate exclusive ownership."

Dates of Green Power
The dates for the green power entered into Portfolio Manager correspond to the dates on the REC contract or other documentation.

Amount of Green Power

The amount of green power purchased can be entered as a fixed amount or as a percentage of electricity for the period covered by the application. The LP must verify that the amounts of green power match a contract and/or utility bills. The LP should also verify the units have been entered correctly (1 REC = 1 MWh = 1,000 kWh).

Product Type

The LP must verify the Green Power product type entered is correct.

Green-e Certification Requirements

The following types of offsite green power[7] must be Green-e certified to be eligible for NextGen:

- Community Choice Aggregation (CCA)
- Utility Green Power Products
- Utility Green Tariffs
- Community Solar

In these cases, it is the LP's responsibility to c
https://www.green-e.org/.

These offsite green power options are not req

- PPA - Power Purchase Agreement (ph
- Competitive Supplier Products
- Unbundled RECs

Note: Portfolio Manager green power me
NextGen will only count four of the offsite
Manager will count green power regardle

Green-e certification for onsite renewable en

Green-e certification is only relevant to onsite
requirements depend on the type of offsite gr
renewable energy and follows the offsite gree

2. Verifying Documentatic

NextGen documentation requirements are dis
depending on project ownership (for onsite tr

For **onsite renewable energy:**

[7] For further definitions of these products, see the chapter "Green Power Product Options" in EPA, *Guide to Purchasing Green Power*, available at: https://www.epa.gov/sites/default/files/2018-08/documents/guide-purchasing-green-power-4.pdf.

"The following types of offsite green power must be **Green-e certified** to be eligible for NextGen:

- Community Choice Aggregation (CCA)
- Utility Green Power Products
- Utility Green Tariffs
- Community Solar"

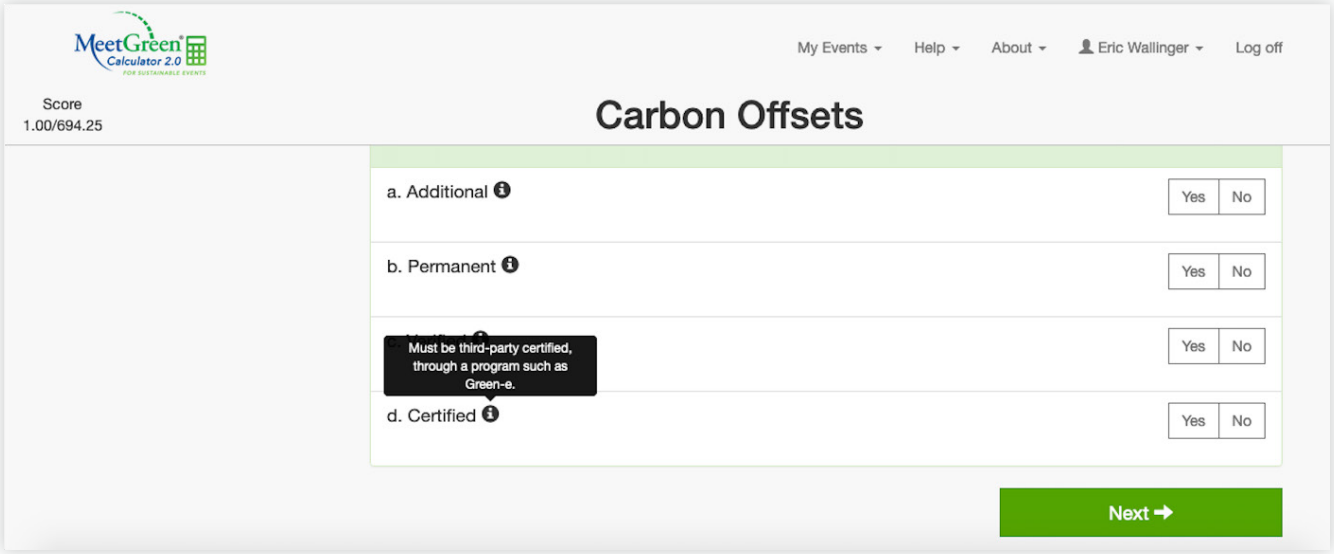
In these cases, it is the LP's responsibility to confirm the **Green-e certification**. You can do this using the **Green-e** website: **https://www.green-e.org/."**

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 electricity
make about renewable energy usage. Over time, both green power products and cla
become increasingly complex. Increasing product and claim complexity poses chal
implicit and explicit frameworks that underpin the voluntary green power market. I
increasing claim complexity creates challenges for the market and legal framework
renewable energy use claims.

3.2.1 Voluntary Green Power Market Claims Frameworks

The voluntary green power market is largely self-regulated and supported by a lega
governing green power products and claims. Market conventions dictate that all ren
energy use claims must be substantiated by RECs, and the details of those claims m
consistent with the specific characteristics of RECs used to support those claims. R
formally recognized as a valid basis for making renewable energy use claims by the
Trade Commission, the U.S. Environmental Protection Agency, the U.S. Federal E
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.

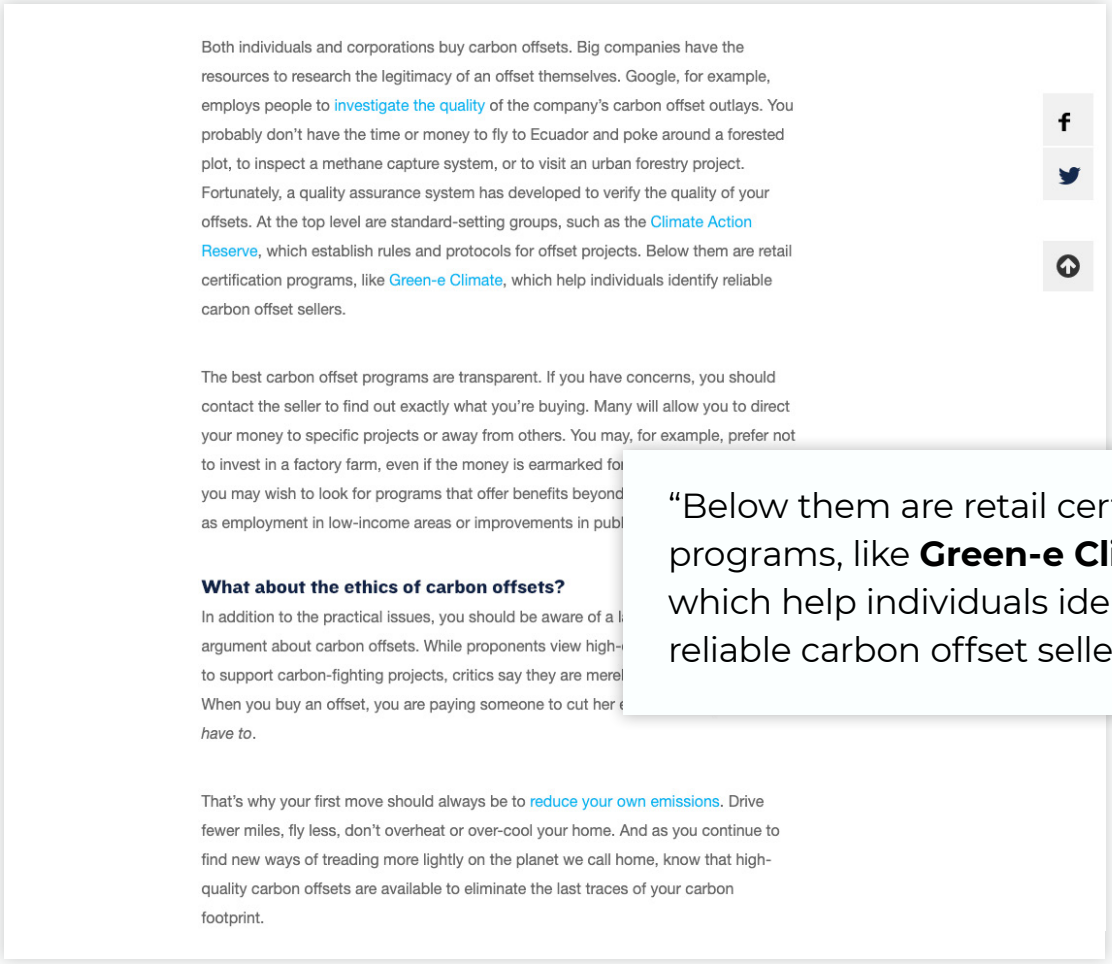
"Third-party certification and verification services such as **Green-e** provide further validation for renewable energy use claims."

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 farm, even if the money is earmarked fo
you may wish to look for programs that offer benefits beyond
as employment in low-income areas or improvements in publ

What about the ethics of carbon offsets?

In addition to the practical issues, you should be aware of a l
argument about carbon offsets. While proponents view high-
to support carbon-fighting projects, critics say they are merel
When you buy an offset, you are paying someone to cut her e
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 meet aggressive environmental goals. Following renovations in 2013, it became

decreases the office’s energy and water use, carbon footprint, and utility costs. Work areas are flooded with natural light and feature recycled, sustainable, and local m
philodendrons that help filter the air and c
which is to connect people with nature ar
productivity. Energy savings are derived f
electronics, lighting systems that adjust a
smart plug sensors that automatically pow
renovation-generated carbon emissions w
power, in the form of Green-e certified Re

> “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

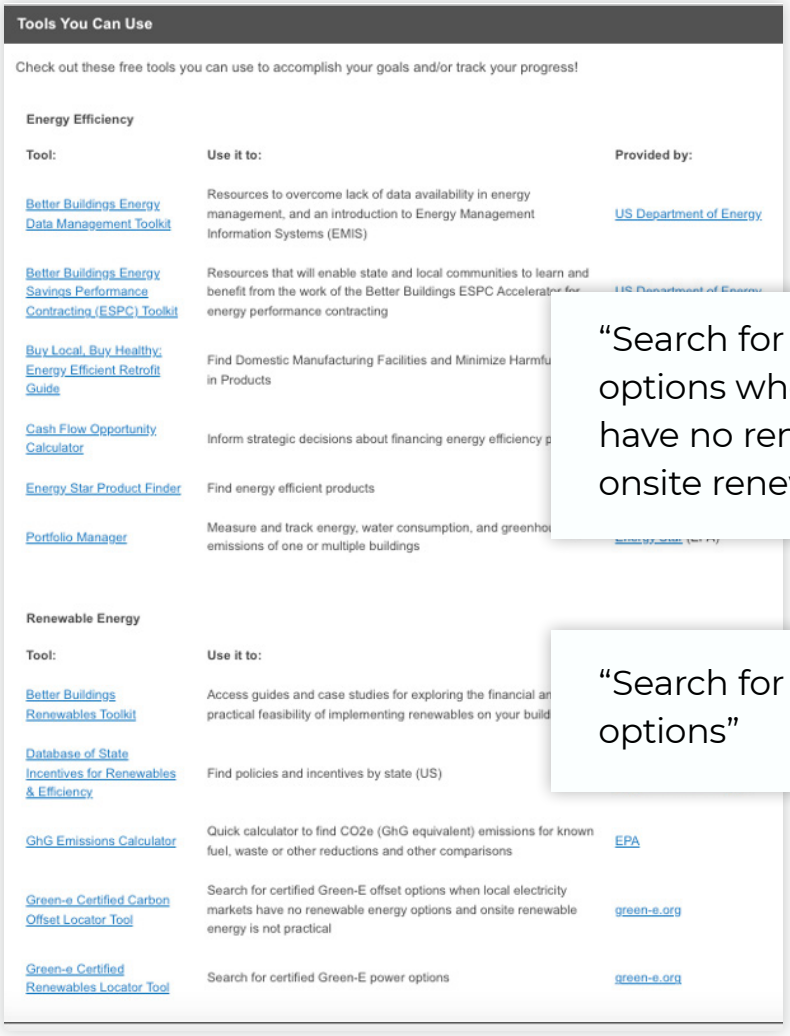
NRDC’s LEED-certified office in Southern California is at the forefront of green building design. Centrally located in a

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



Tools You Can Use

Check out these free tools you can use to accomplish your goals and/or track your progress!

Energy Efficiency

Tool:	Use it to:	Provided by:
Better Buildings Energy Data Management Toolkit	Resources to overcome lack of data availability in energy management, and an introduction to Energy Management Information Systems (EMIS)	US Department of Energy
Better Buildings Energy Savings Performance Contracting (ESPC) Toolkit	Resources that will enable state and local communities to learn and benefit from the work of the Better Buildings ESPC Accelerator for energy performance contracting	
Buy Local, Buy Healthy: Energy Efficient Retrofit Guide	Find Domestic Manufacturing Facilities and Minimize Harmfu in Products	
Cash Flow Opportunity Calculator	Inform strategic decisions about financing energy efficiency p	
Energy Star Product Finder	Find energy efficient products	
Portfolio Manager	Measure and track energy, water consumption, and greenhou emissions of one or multiple buildings	

Renewable Energy

Tool:	Use it to:	
Better Buildings Renewables Toolkit	Access guides and case studies for exploring the financial an practical feasibility of implementing renewables on your build	
Database of State Incentives for Renewables & Efficiency	Find policies and incentives by state (US)	
GhG Emissions Calculator	Quick calculator to find CO2e (GhG equivalent) emissions for known fuel, waste or other reductions and other comparisons	EPA
Green-e Certified Carbon Offset Locator Tool	Search for certified Green-E offset options when local electricity markets have no renewable energy options and onsite renewable energy is not practical	green-e.org
Green-e Certified Renewables Locator Tool	Search for certified Green-E power options	green-e.org

"Search for certified **Green-E** offset options when local electricity markets have no renewable energy options and onsite renewable energy is not practical"

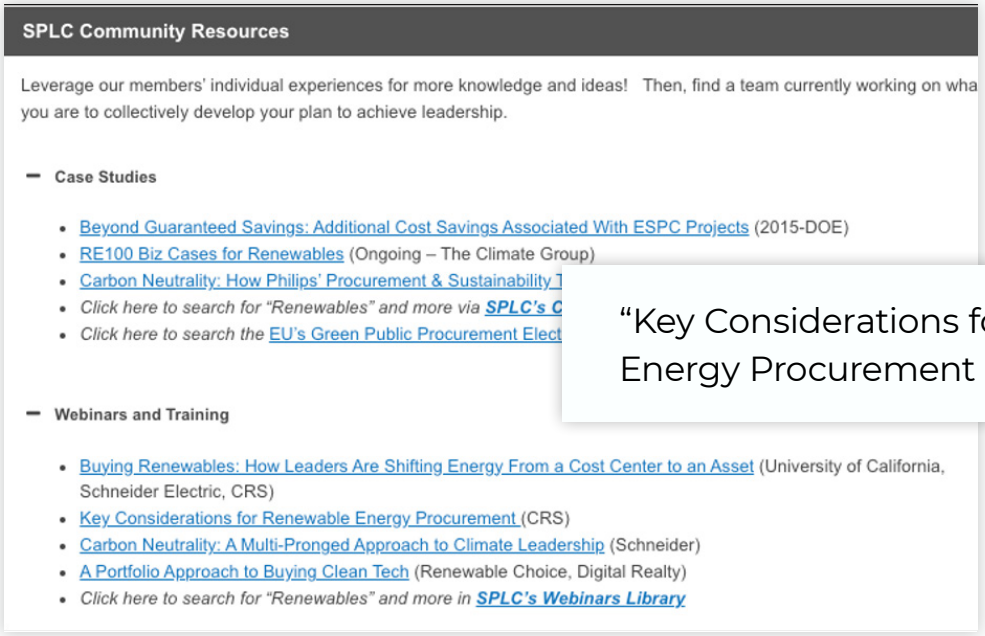
"Search for certified **Green-E** power options"

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



SPLC Community Resources

Leverage our members' individual experiences for more knowledge and ideas! Then, find a team currently working on wha you are to collectively develop your plan to achieve leadership.

Case Studies

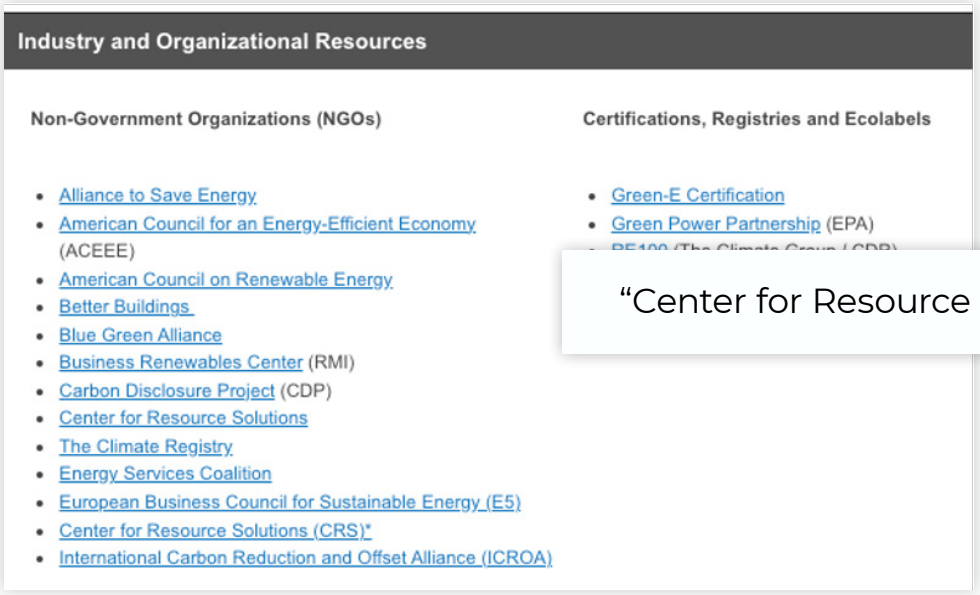
- Beyond Guaranteed Savings: Additional Cost Savings Associated With ESPC Projects (2015-DOE)
- RE100 Biz Cases for Renewables (Ongoing – The Climate Group)
- Carbon Neutrality: How Philips' Procurement & Sustainability T
- *Click here to search for "Renewables" and more via **SPLC's C***
- *Click here to search the EU's Green Public Procurement Elect*

Webinars and Training

- Buying Renewables: How Leaders Are Shifting Energy From a Cost Center to an Asset (University of California, Schneider Electric, CRS)
- Key Considerations for Renewable Energy Procurement (CRS)
- Carbon Neutrality: A Multi-Pronged Approach to Climate Leadership (Schneider)
- A Portfolio Approach to Buying Clean Tech (Renewable Choice, Digital Realty)
- *Click here to search for "Renewables" and more in **SPLC's Webinars Library***

"Key Considerations for Renewable Energy Procurement (CRS)"

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



Industry and Organizational Resources

Non-Government Organizations (NGOs)

- Alliance to Save Energy
- American Council for an Energy-Efficient Economy (ACEEE)
- American Council on Renewable Energy
- Better Buildings
- Blue Green Alliance
- Business Renewables Center (RMI)
- Carbon Disclosure Project (CDP)
- Center for Resource Solutions
- The Climate Registry
- Energy Services Coalition
- European Business Council for Sustainable Energy (E5)
- Center for Resource Solutions (CRS)*
- International Carbon Reduction and Offset Alliance (ICROA)

Certifications, Registries and Ecolabels

- Green-E Certification
- Green Power Partnership (EPA)

"Center for Resource Solutions (CRS)"

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

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 double selli

In the United States and Canada, organiz
site consumption and direct purchases as
bundled REC products.[2]
In markets where renewable energy attrib
energy usage claim, such as the U.S., the
is required (i.e. must be owned by, deliver
tions set out below. In Europe, Guarantee
energy claims; they are required to make
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 and bu**
  are generally found within lighting, HVAC syst
  systems. Consider Energy Service Performan
  improvements with no upfront capital cost.
  - The U.S. Department of Energy provides n
  - The Energy Services Coalition website pro
- **Procure renewable energy:** the selection of
  to evaluate purchasing priorities, such as cost
  generation and impacts, scale, grid impact an
  - Self-generation, grid-connected.
  - Self-generation, off-grid.
  - Physical Power Purchase Agreement.
  - Virtual Power Purchase Agreement.
  - Community Renewables/Solar.
  - Regulated Utility Renewable Energy/Greer
  - Competitive Supplier Renewable Energy/R
  - Unbundled Renewable Energy Credits (RE
- **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."

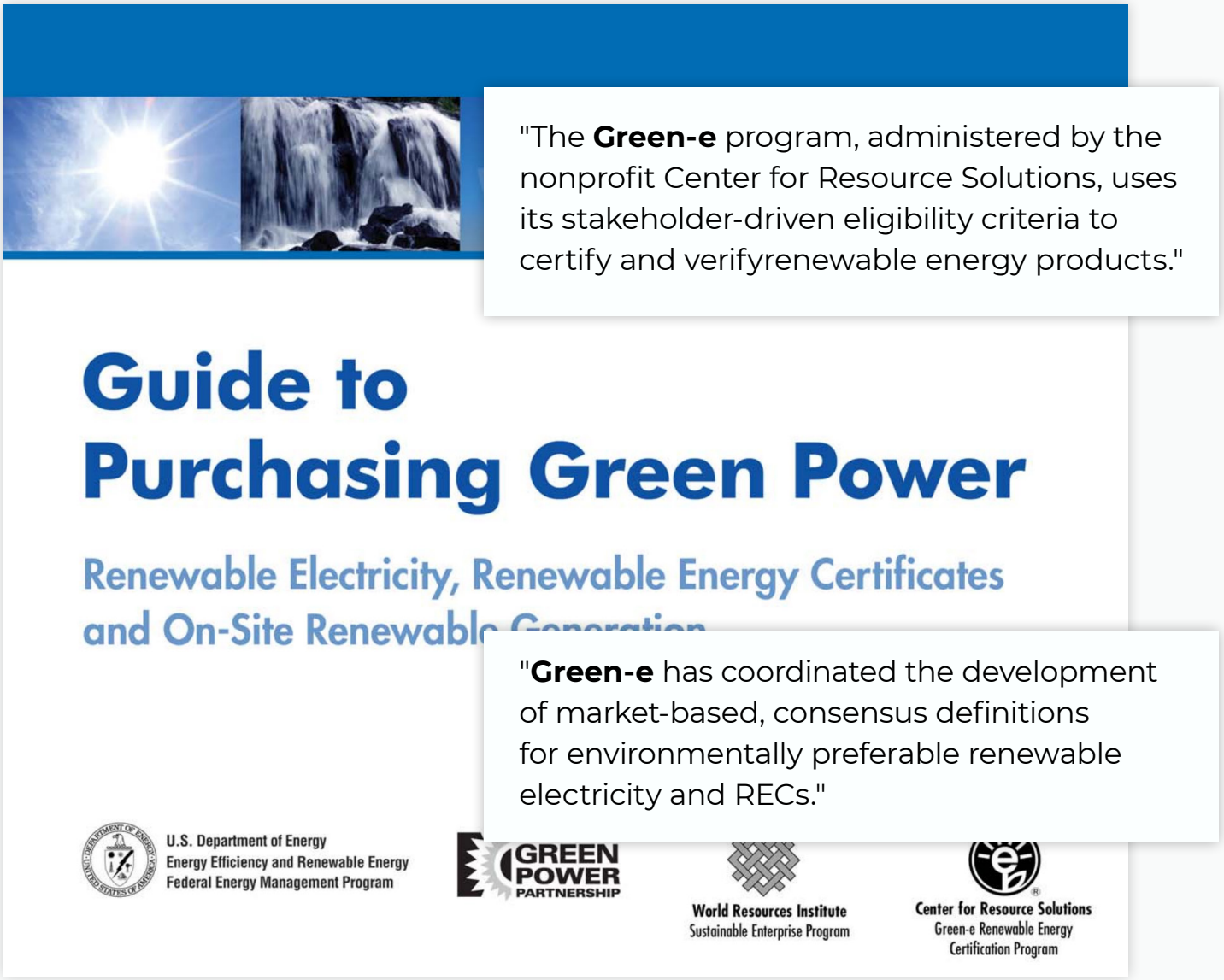
Note: *This screenshot was obtained from a source that requires login access.*

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's 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.

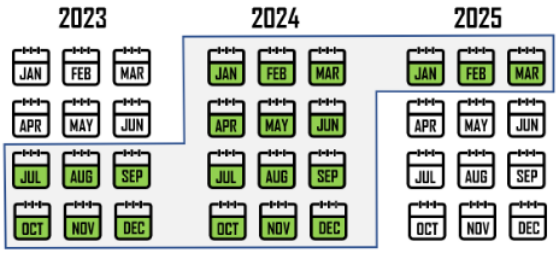


U.S. Department of Energy's Better Climate Challenge Overview

- 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 renewable energy markets**

Many consumers can purchase renewable energy through their existi
numerous states require utility companies to supply a certain share of
sources, a policy called a renewable portfolio standard (RPS). RECs
the requirements of an RPS are said to have been purchased in a ***co***

*A **renewable portfolio standard** is a regulatory policy adopted by 38
in which electricity companies must generate a certain percentage
energy sources. Utilities that do not generate a high enough percentag
to make up the difference.*

In a ***voluntary market***, consumers can choose to purchase RECs no
comply with an RPS but for other reasons. For example, companies
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.

[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

"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."

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 procure unbundled REC
  case, purchasing verified and certified RECs from a supplier that is
  for international markets) is recommended. This helps to avoid dou
  guarantee that RECs come from new renewable energy generation
  the last 15 years) to support the development of new renewable en
  about the Green-e certification program criteria, please refer to the
  Energy Certification.[18]

  In general, if a utility company is supplying all customers with a cer
  electricity as a part of its standard mix, the customers have the righ
  renewable electricity where the utility is responsible for retiring the
  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-REC[17] 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.

U.S. Department of Energy's National Definition of a Zero Emissions Building

- The Green-e® Renewable Energy Standard is referenced by the U.S. Department of Energy in their National Definition of a Zero Emissions Building document

To qualify as clean energy, each source of off-site power generation for the building must meet at least one of the following requirements:

---

[5] Determined by reference to the EUI values in ENERGY STAR, Portfolio Manager Technical Reference: U.S. National Energy Use Intensity (August 28, 2018), https://www.energystar.gov/buildings/tools-and-resources/portfolio-manager-technical-reference-us-national-energy-use, or any successor values published by ENERGY STAR.

6 See ASHRAE, ANSI/ASHRAE/IES Standard 100, https://www.ashrae.org/technical-resources/bookstore/standard-100.

[7] Model code is specified here as the latest edition of the International Energy Conservation Code (IECC) for residential buildings and the latest edition of ANSI/ASHRAE/IES Standard 90.1 for commercial buildings for which DOE has issued an affirmative determination. For more information and the latest determinations visit https://www.energycodes.gov/determinations.

[8] Required testing of backup generators is also exempt from this requirement. Many codes require backup generation that often leads to fossil fuels as the energy source. While clean energy alternatives are encouraged, the current availability of code-compliant alternatives may be limited.

- ANSI/ASHRAE Standard 228, “Standard Method of Evaluating Zero Net Energy and Zero Net Carbon Building Performance,” Sections 8.3 to 8.5;
- Partnership Requirements for the U.S. Environmental Protection Agency’s (EPA) Green Power Partnership;
- “Green-e Renewable Energy Standard for Canada and the United States” (surplus to regulation if applicable); or
- Sections 4.2.4 to 4.2.7 of “Implementing Instructions for Executive Order 14057.”[9]

Documentation and Verification

The purpose of the Definition is to set forth criteria that
use to determine whether a building is a zero emission

Accordingly, The Department of Energy (DOE) will not
building satisfies the Definition. Rather, each entity that
the Definition should determine how to document and v
meets the Definition, including:

- Whether to accept data directly from a building’s
that a third-party certifier or licensed professiona
- Whether, and how often, to review a building’s c
and
- The documentation format.

"To qualify as clean energy, each source of off-site power generation for the building must meet at least one of the following requirements:...

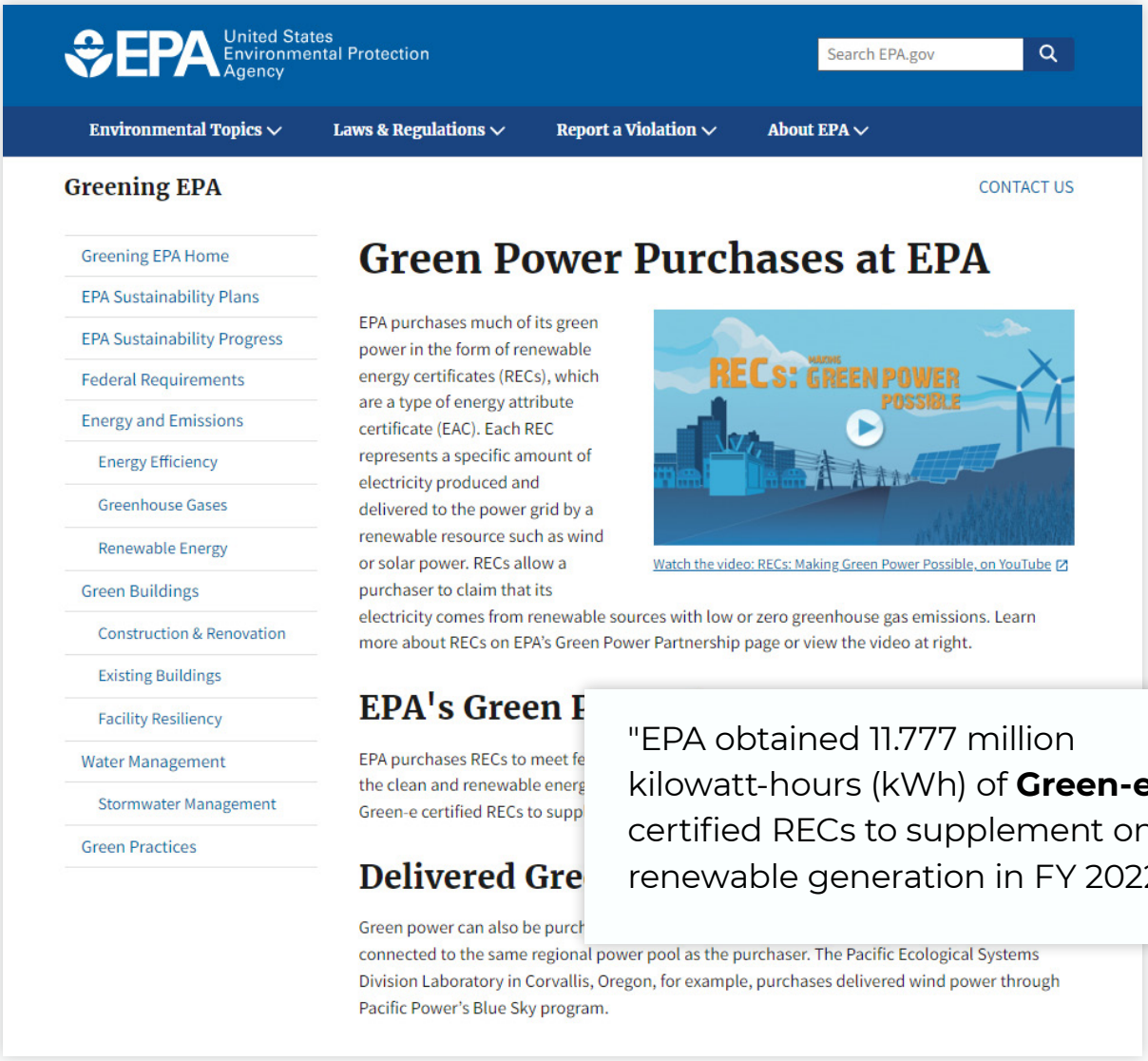
'**Green-e** Renewable Energy Standard for Canada and the United States' (surplus to regulation if applicable)..."

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.

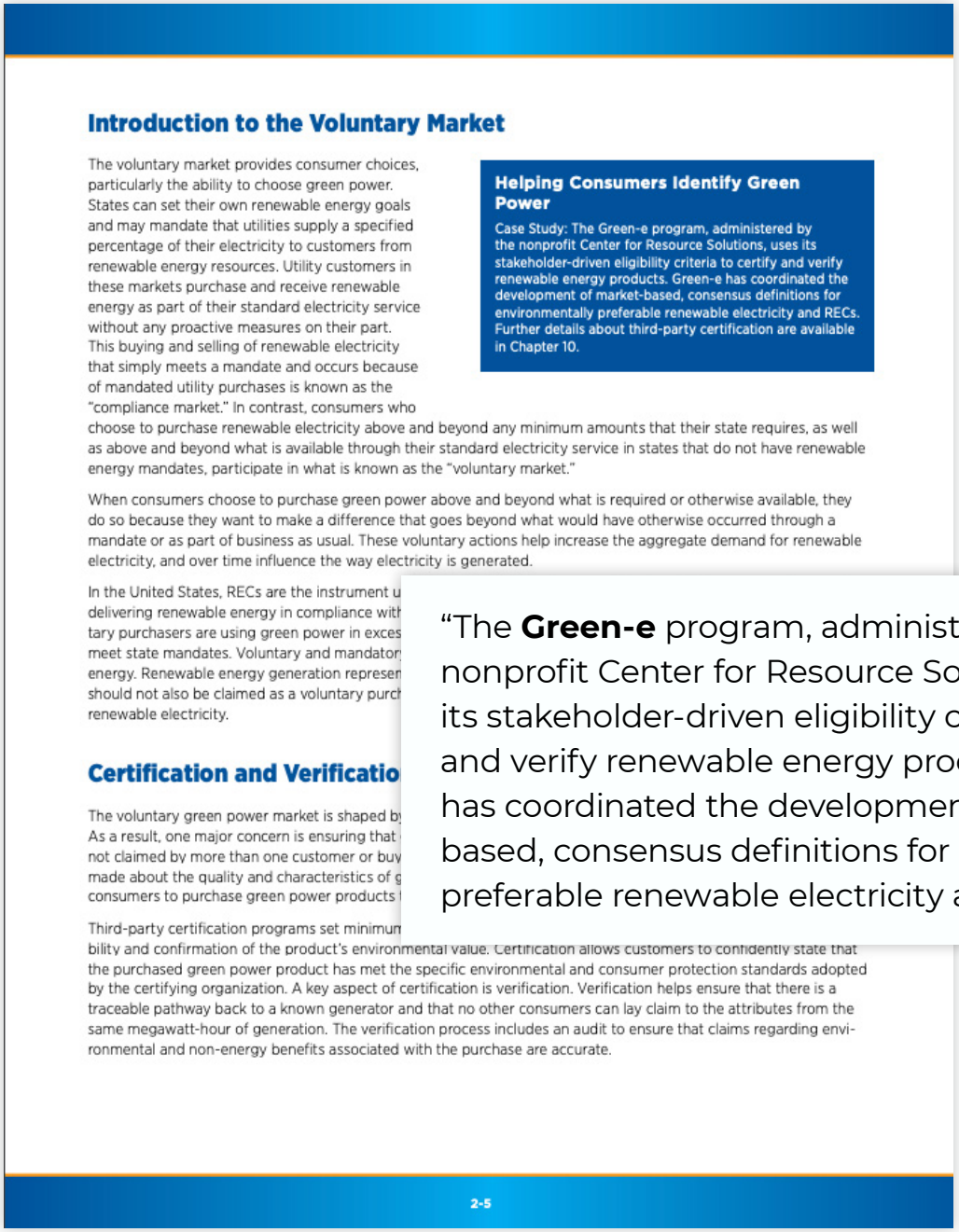


"EPA obtained 11.777 million kilowatt-hours (kWh) of **Green-e** certified RECs to supplement onsite renewable generation in FY 2022."

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 instrument u
delivering renewable energy in compliance with
tary purchasers are using green power in exces
meet state mandates. Voluntary and mandator
energy. Renewable energy generation represen
should not also be claimed as a voluntary purch
renewable electricity.

Certification and Verificatio

The voluntary green power market is shaped by
As a result, one major concern is ensuring that
not claimed by more than one customer or buy
made about the quality and characteristics of g
consumers to purchase green power products

Third-party certification programs set minimum
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

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