



# Voluntary Renewable Energy Markets 101 Motivations, Claims, & Standards

Renewable Energy Markets Conference 2017

October 22, 2017





# Green Power Partnership Overview

- **Summary**
  - The U.S. EPA's Green Power Partnership is a **voluntary** program that encourages US based organizations to use green power.
- **Objectives**
  - Reduce U.S. greenhouse gas emissions
  - Expand the voluntary green power market
  - Standardize green power procurement as part of best practice environmental management
- **Program Activities**
  - Provide technical assistance and tools on how to procure green power
  - Provide recognition platform for organizations using green power in the hope that others follow their lead
- +1,500 Partners are purchasing >44 B kWh annually



# Value Proposition to Companies

- **Environmental**
  - Addresses indirect GHG emissions (Scope 2 emissions)
- **Potential Electricity Cost Savings and/or Stability**
  - Reduce exposure to fossil fuel price volatility
- **Economic Development**
  - Job creation
  - Local/regional economic growth
- **Demonstrate Leadership**
  - Enhance image
  - Differentiate products/services
  - Improve employee morale/attract and retain talent
- **Capture Favorable Media Attention**

“Purchasing green power helps our organization become more sustainable while also sending a message to others that supporting clean sources of electricity is a sound business decision and an important choice to help fight climate change.”  
- Jodi Shapiro, VP, Environment, Health and Safety, Motorola.



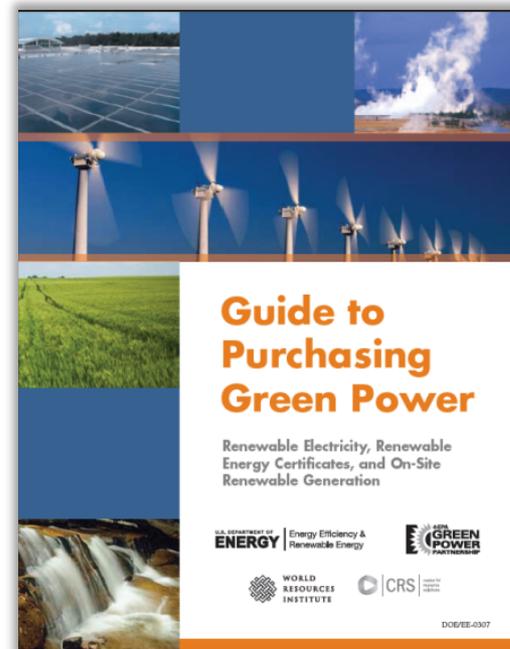


# Partner Motivations

- Range from basic desires to strategic goals
- Basic motivations:
  - Be a market leader
  - Do the right thing
  - Make an impact
- Strategic motivations:
  - Plans to be a more socially responsible organization
  - Seeks to reduce a corporate greenhouse gas (GHG) inventory
  - Desires to differentiate products or services
  - Reduce electricity costs and/or stabilize electricity costs

# Partnership Offerings & Benefits

- **Benchmarks**
  - Definition of eligible renewables
  - Metric for “How much green power?”
- **Resources**
  - Purchasing guidance
  - Marketing and communications support
  - Informational webinars
- **Recognition**
  - Top Partner Lists
  - Green Power Leadership Awards
  - Use of the Partner logo
- **Best Practices and Innovation**
  - On-Site Solar Resource Directory

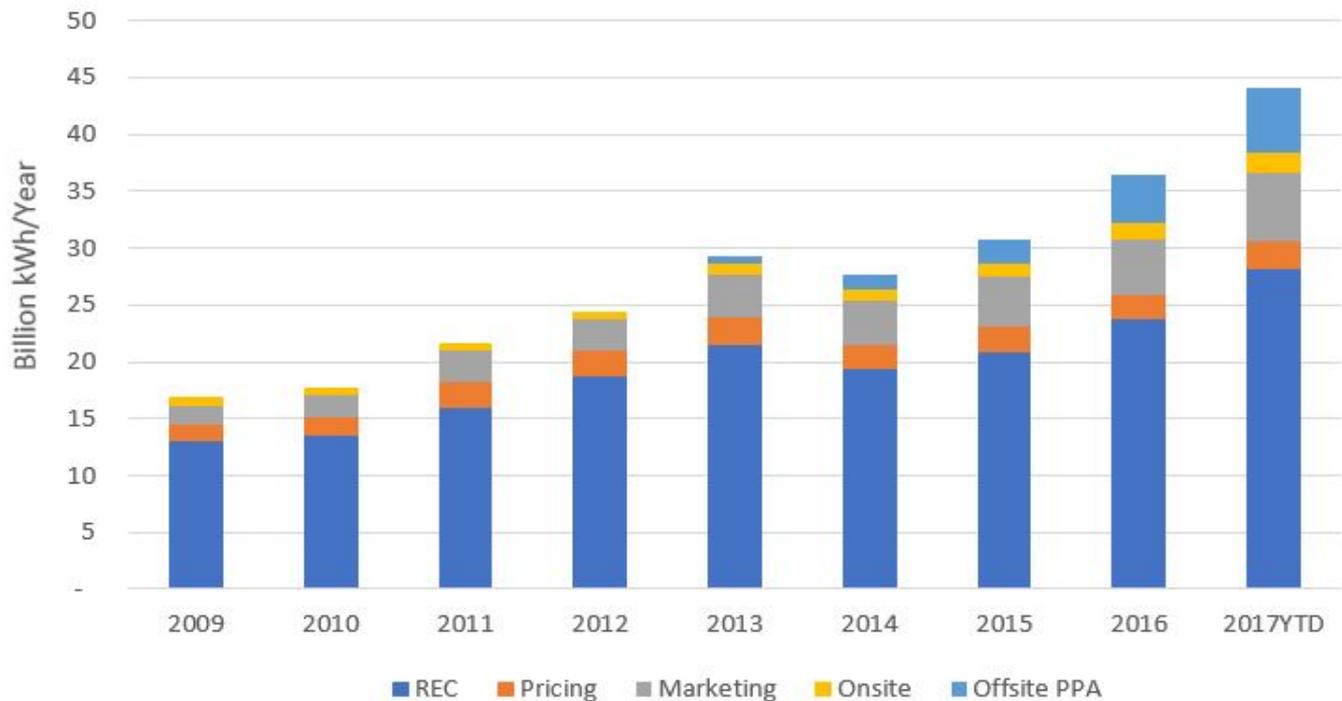




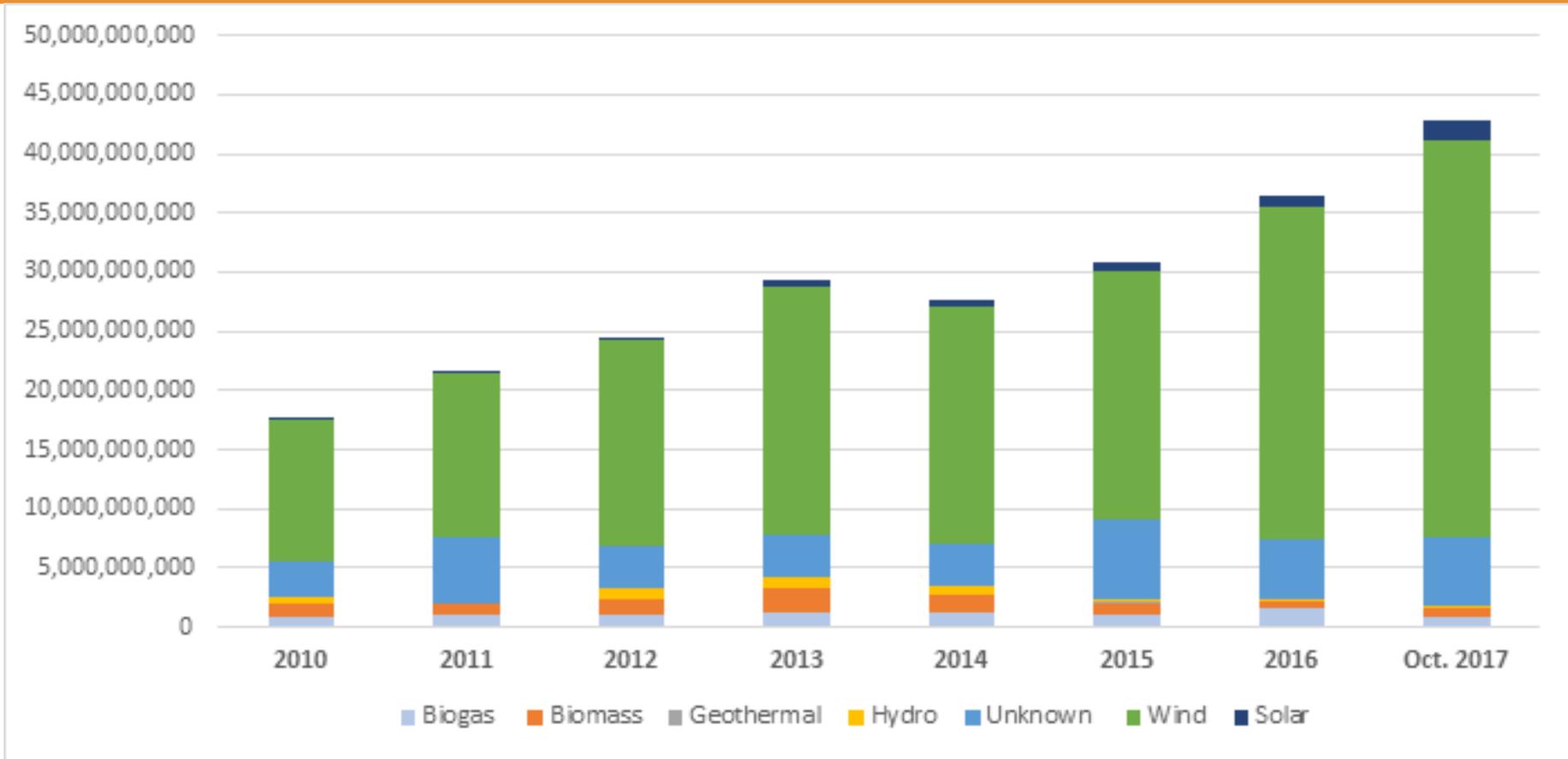


# Partners' Green Power Use By Product Type

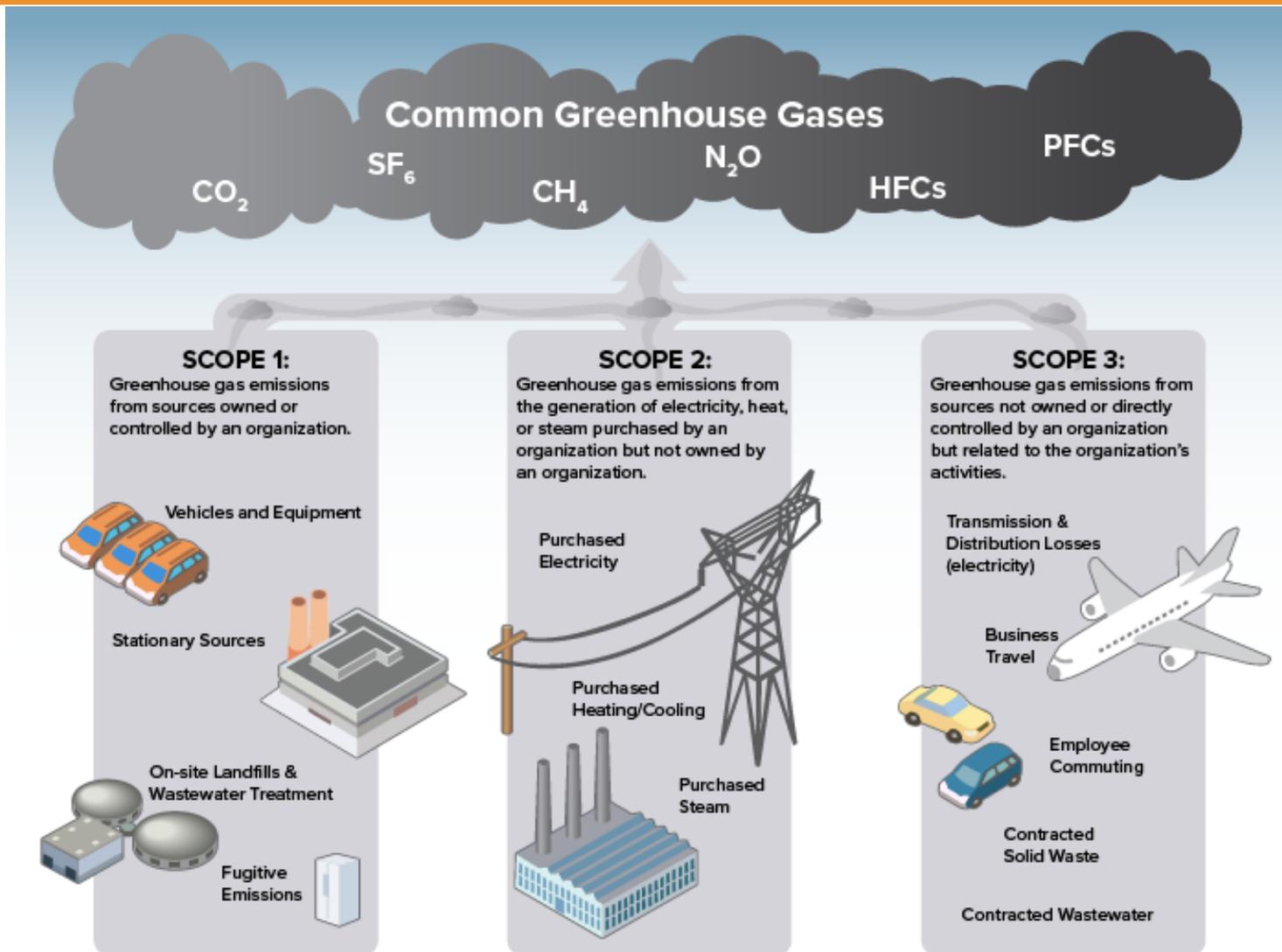
## Green Power Use by Supply Option



# Partners Green Power Use by resource type (kWh)



# GHG Accounting





# Example: Corporate GHG Accounting

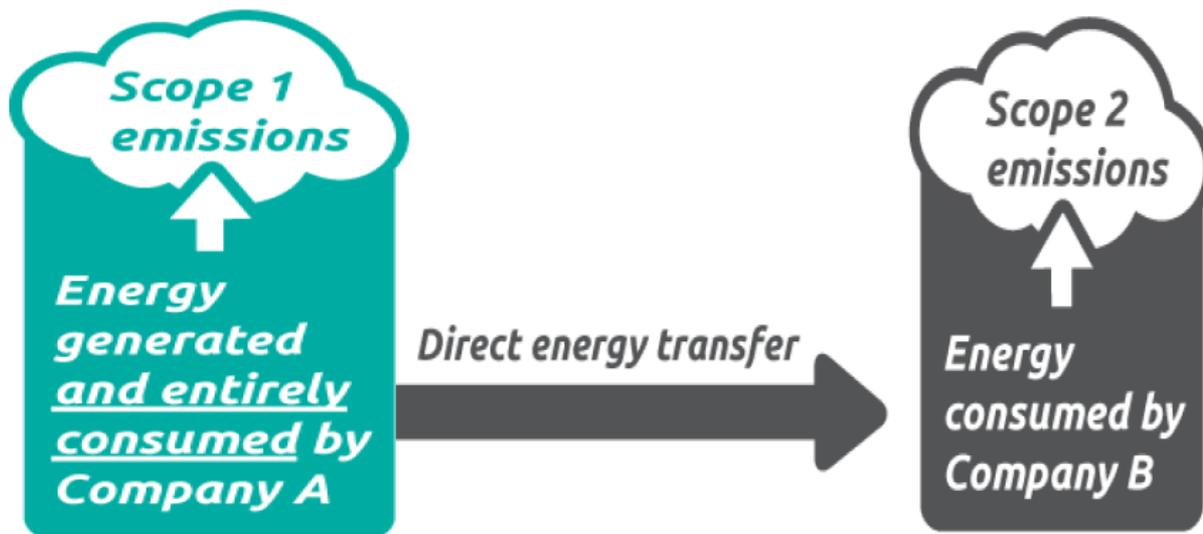
- Many organizations are accounting for the GHG emissions related to their operations and doing business
- Purchased electricity is often a big source of GHGs
- Renewable electricity is one way to reduce the carbon footprint associated with purchased electricity

# Scope 1 vs Scope 2



**If the consumed electricity comes from owned/operated equipment**

**If the consumed electricity comes from a direct-line transfer**



# Acquiring Green Power

- **Unbundled Renewable Energy Certificates (RECs)**
  - Attributes are based on the generation technology type and age, geographic location, and time of generation
  - Does not include the underlying electrons – “unbundled”
- **Utility Supplied Green Power Products**
  - Green power offered by utility suppliers generated from renewable sources
  - “Bundled” product that includes both the RECs and underlying electrons
- **Self Generation**
  - Install a self-owned renewable system (e.g. solar panels, wind turbine)
  - Produces both electricity and RECs from the on-site source
- **Virtual Net-metering / Community Solar**
  - Allows utility customers to share the electricity output from a single power project, typically in proportion to their ownership of the shared system.
- **Power Purchase Agreement (PPA) for Renewables**
  - Usually a long-term contract to procure RECs and underlying electrons from a specific project, can be signed pre- or post-project development
  - Can be from onsite or offsite project
  - PPA can be “physical” or “virtual”





# REC Video



[https://www.youtube.com/watch?v=\\_12VYXms6-c](https://www.youtube.com/watch?v=_12VYXms6-c)





# Renewable Energy Certificate as an Instrument

- A Renewable Energy Certificate is the legal instrument that conveys to its owner, the right to claim the associated environmental attributes of its generating resource.
- A REC is created for every Megawatt-hour of renewable electricity generated and delivered to the utility grid
- RECs allow one to monetize the renewable attributes and can be sold separately from the underlying power
- REC contracts give the buyer the exclusive rights to the renewable and environmental values of renewable electricity
  - RECs are the mechanism used to track the emissions benefits and environmental attributes of renewable electricity
- RECs can be formally recognized by bilateral contracts and tracking systems





# REC value

- Currency of renewable energy markets – both compliance and voluntary
  - Allow access to, allocate, and claim use of renewable generation on a shared grid
- Inherent in all green power procurements; from unbundled RECs to investing in your own RE project
  - Green power purchases can be customized based on several criteria (i.e., resource, geography, supplier, term etc.)
  - You must retain the RECs associated with onsite projects in order to claim to be using renewable electricity
- They are not offsets – different instruments, different applications and claims
- EPA recommends buying certified and verified green power products as a best practice



# Why are RECs important?

- Instrument through which renewable energy and environmental claims are substantiated
- Tool used for meeting corporate goals for greenhouse gas reporting as well as for state policy mandates under Renewable Energy Portfolio (RPS) standards
  - They are used by organizations as a tool to reduce their scope 2 emissions
- Influence electricity market dynamics by allowing the expression and aggregation of consumer preferences for specific forms of electricity generated from renewables
  - REC procurement reduces available REC supply sending a demand signal to the market to develop more supply
- Incent new renewable energy project development
  - Voluntary users can qualify their preference for specific renewables
  - States can spur development through mandated programs (SREC programs)



# RECs Are Not Offsets

## *Don't confuse RECs with carbon offsets*

### RECs

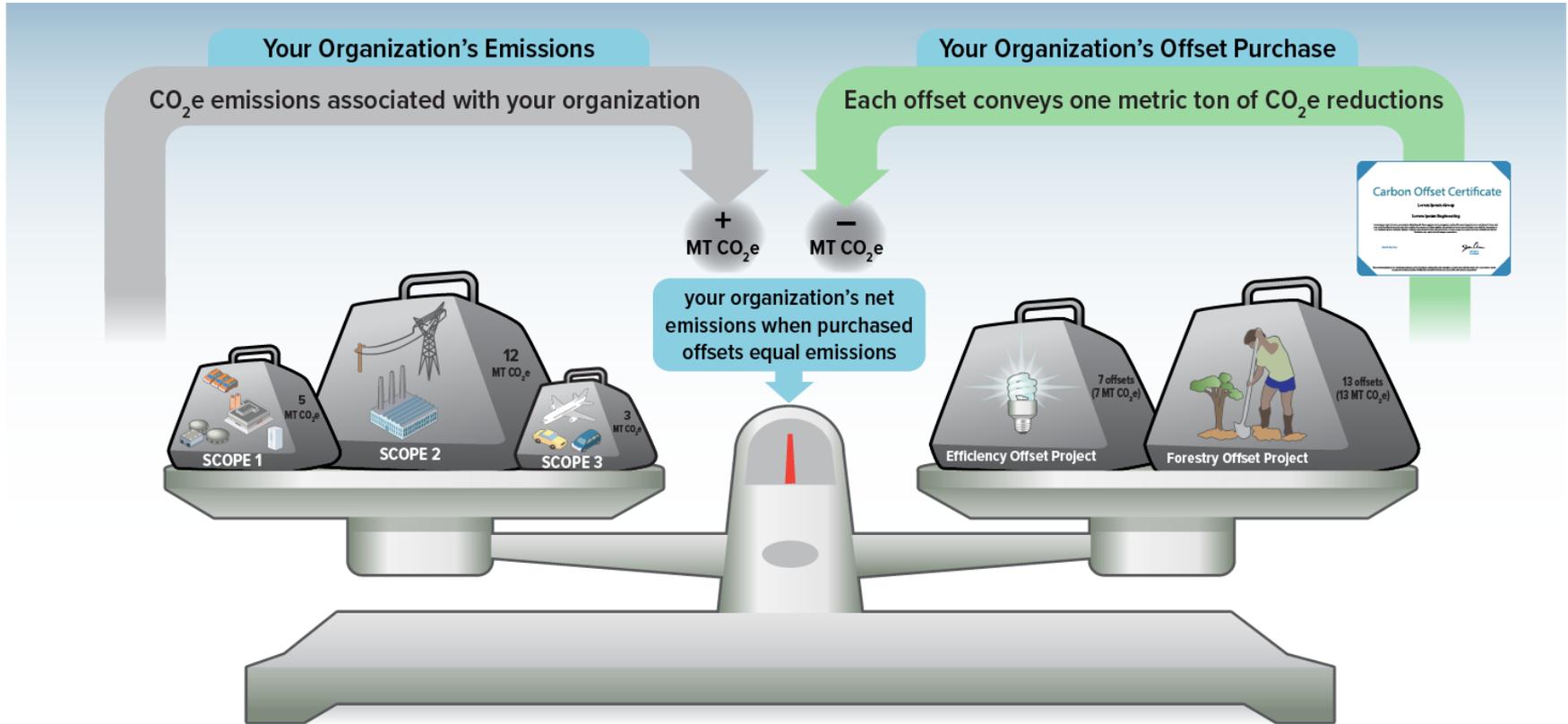
- RECs are the environmental benefits of 1 MWh (1,000 kWh) of renewable electricity
- RECs can reduce GHG emissions associated with purchasing and using electricity
- GHG claims pertain to purchased electricity only

### Offsets

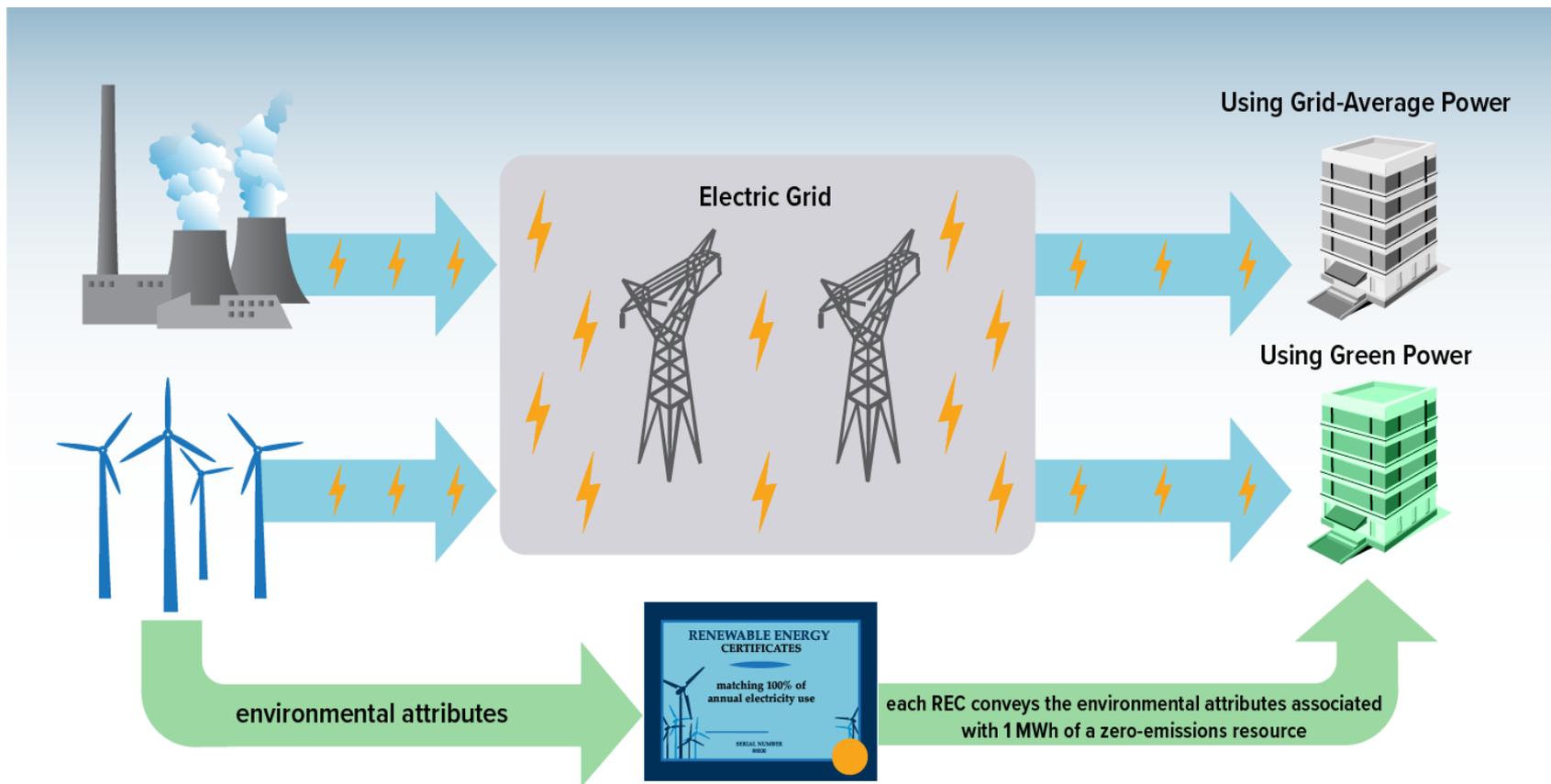
- Offset is a metric ton of GHG emissions reduced or avoided
- Offsets can offset an organization's GHG emissions
- GHG claims pertain to GHG reductions achieved by the offset project



# Project Offsets

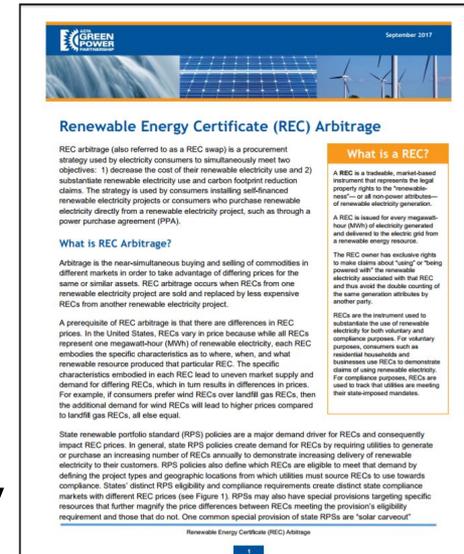


# Renewable Energy Certificates



# Selling RECs to make the project economical

- Consider a REC arbitrage
  - Monetize the RECs from the onsite system into the local market to meet the required project economics
  - Use some of the value of the monetized RECs to seek and buy lower cost replacement RECs to offer your organizations a renewable electricity claim and lower your carbon footprint
- REC price varies based on many factors (supply, demand, location, resource type, size of purchase, timing, market application)
- Arbitrage still changes your claims – slightly!
- Why is there such a price disparity between RECs used for state compliance claims verses RECs used for voluntary claims?
  - Price distortion is due to Alternative Compliance Payments placed on regulated entities



**Renewable Energy Certificate (REC) Arbitrage**

REC arbitrage (also referred to as a REC swap) is a procurement strategy used by electricity consumers to simultaneously meet two objectives: 1) decrease the cost of their renewable electricity use and 2) substantiate renewable electricity use and carbon footprint reduction claims. The strategy is used by consumers installing self-financed renewable electricity projects or consumers who purchase renewable electricity directly from a renewable electricity project, such as through a power purchase agreement (PPA).

**What is a REC?**

A REC is a tradable, market-based instrument that represents the legal property rights to the "renewable" part— or all non-power attributes— of renewable electricity generation.

A REC is issued for every megawatt-hour (MWh) of electricity generated and delivered to the electric grid from a renewable energy resource.

The REC owner has exclusive rights to make claims about "using" or "being powered with" the renewable electricity associated with that REC and thus avoid the double counting of the same generation attributes by another party.

RECs are the instrument used to substantiate the use of renewable electricity for both voluntary and compliance purposes. For voluntary purposes, consumers such as residential households and businesses use RECs to demonstrate claims of using renewable electricity. For compliance purposes, RECs are used to track that utilities are meeting their state-imposed mandates.

**What is REC Arbitrage?**

Arbitrage is the near-simultaneous buying and selling of commodities in different markets in order to take advantage of differing prices for the same or similar assets. REC arbitrage occurs when RECs from one renewable electricity project are sold and replaced by less expensive RECs from another renewable electricity project.

A prerequisite of REC arbitrage is that there are differences in REC prices. In the United States, RECs vary in price because while all RECs represent one megawatt-hour (MWh) of renewable electricity, each REC embodies the specific characteristics as to where, when, and what renewable resource produced that particular REC. The specific characteristics embodied in each REC lead to uneven market supply and demand for differing RECs, which in turn results in differences in prices. For example, if consumers prefer wind RECs over landfill gas RECs, then the additional demand for wind RECs will lead to higher prices compared to landfill gas RECs, all else equal.

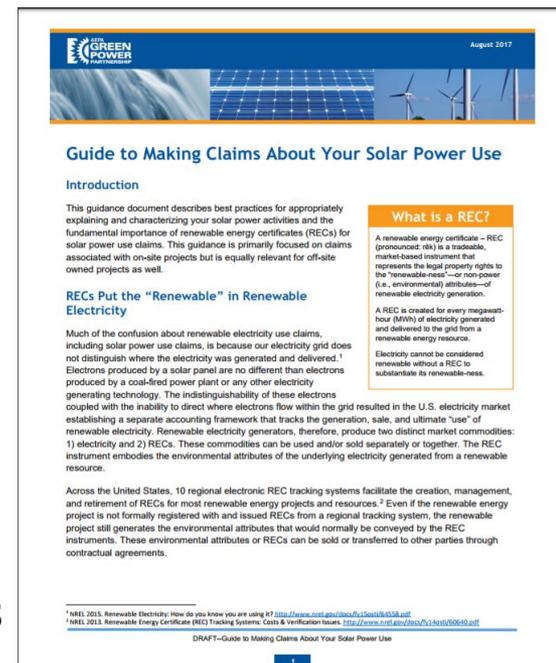
State renewable portfolio standard (RPS) policies are a major demand driver for RECs and consequently impact REC prices. In general, state RPS policies create demand for RECs by requiring utilities to generate or purchase an increasing number of RECs annually to demonstrate increasing delivery of renewable electricity to their customers. RPS policies also define which RECs are eligible to meet that demand by defining the project types and geographic locations from which utilities must source RECs to use towards compliance. States' distinct RPS eligibility and compliance requirements create distinct state compliance markets with different REC prices (see Figure 1). RPSs may also have special provisions targeting specific resources that further magnify the price differences between RECs meeting the provision's eligibility requirement and those that do not. One common special provision of state RPSs are "solar carveouts"

Renewable Energy Certificate (REC) Arbitrage

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# Making Environmental Claims

- Explain green power & the environmental benefits
  - Public has limited understanding of green power and its benefits
  - Provide simple information about the difference you will make
  - Ensure that you have retained the contractual rights to make claims
- Make your message transparent and tangible
- A simple, safe claim
  - I use renewable electricity from a zero emissions resource
- Focus on GHG emission claims, rather than clean air benefits
  - Environmental regulations for SO<sub>2</sub> and NO<sub>x</sub> complicate those claims



<https://www.epa.gov/greenpower/guide-making-claims-about-your-solar-power-use>



# Types of Partner Claims

- Purchaser claims
  - Powered in part or wholly by renewable electricity
  - Reducing our emissions associated with purchased electricity
  - Supporting renewable energy
- Generator claims
  - Generates renewable electricity
  - Produces zero or low emissions electricity



# Direct or Express Claims

- **FTC Example:** A toy manufacturer places solar panels on the roof of its plant to generate power, and advertises that its plant is “100% solar-powered.” The manufacturer, however, sells renewable energy certificates based on the renewable attributes of all the power it generates. Even if the manufacturer uses the electricity generated by the solar panels, it has, by selling renewable energy certificates, transferred the right to characterize that electricity as renewable.
- The manufacturer’s claim is therefore deceptive.



# Implied Claims

- A toy manufacturer places solar panels on the roof of its plant to generate power....
- It also would be deceptive for this manufacturer to advertise that it “hosts” a renewable power facility because reasonable consumers likely interpret this claim to mean that the manufacturer uses renewable energy.



# Implied Claims, continued

- A university issues a press release about its recent power purchase agreement for a on-campus, 1 MW solar array
- Press release highlights:
  - University's goal of achieving carbon neutrality by 2030
  - University's new purchase of fixed price electricity from the on-campus solar facility.
- Both claims are technically accurate.
- However, reasonable consumer would interpret as the university is using solar to reduce its carbon footprint.



# Determining REC Ownership

- Review power purchase agreement (PPA) contracts, interconnection and net-metering agreements, state and utility incentives, and other solar contracts.
- Look for “renewable energy certificates”, “renewable energy credits”, “environmental attributes”, “green tags”, or similar.
- Solar Energy Industries Association’s Solar Business Code
  - Guiding Principles
    - 5.12: Renewable Energy Certificate (“REC”) ownership is a Material Term in a solar contract, regardless of ownership structure (e.g., purchase, lease, power purchase agreement).
    - 5.14: Many Consumers are unfamiliar with RECs and their characteristics.... The Company must take steps to educate its Consumer about RECs, including providing ...: Guidelines for Renewable Energy Claims: Guidance for Consumers and Electricity Providers, Center for Resource Solutions (Feb. 26, 2015) [<http://resource-solutions.org/site/wp-content/uploads/2015/07/Guidelines-for-Renewable-Energy-Claims.pdf>]



# Determining REC Ownership

## Environmental Attributes and Environmental Incentives.

Unless otherwise specified on Exhibit 1, Seller is the owner of all Environmental Attributes and Environmental Incentives and is entitled to the benefit of all Tax Credits, and Purchaser's purchase of electricity under this Agreement does not include Environmental Attributes, Environmental Incentives or the right to Tax Credits or any other attributes of ownership and operation of the System, all of which shall be retained by Seller. Purchaser shall cooperate with Seller in obtaining, securing and transferring all Environmental Attributes and Environmental Incentives and the benefit of all Tax Credits, including by using the electric energy generated by the System in a manner necessary to qualify for such available Environmental Attributes, Environmental Incentives and Tax Credits. Purchaser shall not be obligated to incur any out-of-pocket costs or expenses in connection with such actions unless reimbursed by Seller. If any Environmental Incentives are paid directly to Purchaser, Purchaser shall immediately pay such amounts over to Seller. To avoid any conflicts with fair trade rules regarding claims of solar or renewable energy use, Purchaser, if engaged in commerce and/or trade, shall submit to Seller for approval any press releases regarding Purchaser's use of solar or renewable energy and shall not submit for publication any such releases without the written approval of Seller. Approval shall not be unreasonably withheld, and Seller's review and approval shall be made in a timely manner to permit Purchaser's timely publication.

"Environmental Attributes" means any and all credits, benefits, emissions reductions, offsets, and allowances, howsoever entitled, attributable to the System, the production of electrical energy from the System and its displacement of conventional energy generation, including (a) any avoided emissions of pollutants to the air, soil or water such as sulfur oxides (SO<sub>x</sub>), nitrogen oxides (NO<sub>x</sub>), carbon monoxide (CO) and other pollutants; (b) any avoided emissions of carbon dioxide (CO<sub>2</sub>), methane (CH<sub>4</sub>), nitrous oxide, hydrofluorocarbons, perfluorocarbons, sulfur hexafluoride and other greenhouse gases (GHGs) that have been determined by the United Nations Intergovernmental Panel on Climate Change, or otherwise by law, to contribute to the actual or potential threat of altering the Earth's climate by trapping heat in the atmosphere; and (c) the reporting rights related to these avoided emissions, such as Green Tag Reporting Rights and Renewable Energy Credits. Green Tag Reporting Rights are the right of a party to report the ownership of accumulated Green Tags in compliance with federal or state law, if applicable, and to a federal or state agency or any other party, and include Green Tag Reporting Rights accruing under Section 1605(b) of The Energy Policy Act of 1992 and any present or future federal, state, or local law, regulation or bill, and international or foreign emissions trading program. Environmental Attributes do not include Environmental Incentives and Tax Credits. Purchaser and Seller shall file all tax returns in a manner consistent with this Section 5. Without limiting the generality of the foregoing, Environmental Attributes include carbon trading credits, renewable energy credits or certificates, emissions reduction credits, emissions allowances, green tags tradable renewable credits and Green-e® products.



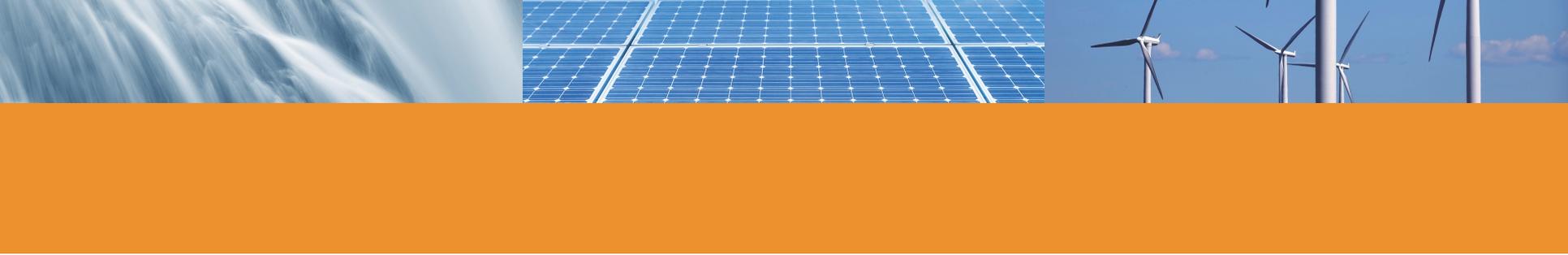
# Potential Consequences of Deceptive Claims

- Legal: Federal Trade Commission and state attorney general offices
- Contractual & Financial: Breach of contract
- Brand & Reputation: Issuance of clarifying statement
- Renewable Energy Market: Double “use” claim on the same renewable electricity
- GHG Accounting: Double accounting for same zero emission resource



# Market Standards & Guidance

- **U.S. EPA**
  - Green Power Partnership minimum purchase requirements
- **U.S. FTC revised Green Guides on marketing claims**
- **WRI/WBCSD GHG accounting standards**
- **Third-party certification/verification**
  - Certification is a best practice for voluntary REC markets
  - While certification is not mandatory or necessary for REC generation, the standards used by REC certifiers set expectations for both the compliance and voluntary REC markets



# Interactive Claims Workshop



# Q & A



"There are no stupid questions, so let's also agree there are no stupid answers."

# REM 2017

## Contact Information

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