Renewable Energy 101:
Motivations, Claims, & Importance

Green Power Partnership

- **Working to increase organizational demand for renewable electricity**
  - Value: reduces the transaction costs and increases the overall value proposition
  - Key offerings: credible purchase requirements, trusted market information, and EPA recognition
  - Strategy: direct outreach to targeted organizations and coordination with green power retailers

Over 1,300 EPA Green Power Partners Purchasing over 21 Billion kWh/year

Walmart
KOHL'S expect great things
intel Leap ahead
Penn University of Pennsylvania
DELL
SAP
CISCO
HSBC
MOTOROLA
District of Columbia
Starbucks Coffee
Wells Fargo
World Bank Group
Staples
City of Chicago Incorporated 4th March 1837
Bayer
ING
City of Dallas Texas
Whole Foods Market
Phillies
Johnson & Johnson
State Street
Kimberly-Clark
AMD
Raytheon
U.S. Air Force
Giant Eagle
macy's inc
Owens Corning
FedEx
Applied Materials think it. apply it.
Coldwater Creek
liz claiborne
Lockheed Martin
REI www.rei.com
City of Houston Texas
Baxter
Sprint
Office Depot
Roche
Safeway

Topics

- **MOTIVATIONS** **Why purchase?**
- CLAIMS What are safe statements?
- IMPORTANCE How GP makes a difference?
- SUPPORT Who can help?

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Green Power Options

- **Install renewable electricity systems on-site**
  - Electricity and renewable energy certificates (RECs)
- **Purchase green power**
  - Electricity and RECs
- **Purchase RECs**
  - RECs are tradable instruments, expressed 1 MWh units of generation
    - ✓ They represents the source's resource type, facility location, direct emissions, and generation date, among other characteristics

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Additional Ways to Support RE

RE 201: Advanced Material

- **Purchase renewable electricity or RECs**
  - Purchase from an existing facility on an annual or multi-year basis
- **Sign a PPA or power purchase agreement**
  - Support a new facility by contracting for electricity and/or RECs
- **Collaborative purchasing**
  - Reduce your costs + increase support for new or existing facilities
- **Direct investment or project ownership**
  - Take a ownership/equity stake or in a new facility

Partner Motivations

- **Green power can help organizations manage risk by**
  - Reducing corporate GHG emissions
  - Reducing exposure to fossil-fuel price volatility
  - Maintaining/enhancing corporate image
  - Differentiating products/services

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Example: Reducing Corporate GHGs

- **RECs can be used to meet GHG emissions targets**
  - RECs can only be used to adjust scope 2 from purchased electricity
  - Claims pertain to a corporate footprint, not total GHG emissions
- ***Please note:* RECs and offsets are not the same**
  - Offsets can be used to adjust GHG emissions in scope 1, 2, or 3
    - ✓ Offsets are expressed in tons of emission reduced and may come from a variety of project types not related to power generation
    - ✓ Offsets rely on a rigorous review and criteria that assess whether the reductions are real, additional, measurable, permanent and verified

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Sidebar: GHG Accounting 101

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Scopes for Corporate GHG Accounting and EPA's Interpretation of Their Use

Scope	Description	Applicability		Allowable Reduction Claims
		RECs	Offset	
Scope 1 (Direct Emissions)	Emissions from sources that the organization owns or controls, such as industrial processes, natural gas consumption in buildings, owned vehicles, and owned energy generators[11]	No	Yes	Total GHG emission reductions; direct emission reductions
Scope 2 (Indirect Emissions)	Emissions associated with the generation of electricity, steam, or heat—from sources that the organization does not own—that is purchased and consumed by the organization	Yes	Yes	Carbon footprint reductions; indirect emission reductions
Scope 3 (Other Indirect Emissions)	Emissions from other sources the organization does not own or control; examples include waste disposal, leased/outsourced activities, business travel, and employee commuting	No	Yes	Carbon footprint reductions; indirect emission reductions

Source: U.S. Environmental Protection Agency, *The Environmental Value of Purchasing Renewable Energy Certificates Voluntarily,* 2010, http://www.epa.gov/greenpower/documents/gpp_basics-recs_voluntary.pdf.

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- **CLAIMS** — What are safe statements?
- **IMPORTANCE** — How GP makes a difference?
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Types of Partner Claims

- **Generator claims**
  - Generates renewable electricity
  - Produces zero or low emissions electricity
- **Purchaser claims**
  - Powered in part or wholely by renewable electricity
  - Reducing emissions associated with purchased electricity
  - Supporting renewable energy
- **Host claims**
  - If RECs are contracted for (or replacement RECs are purchased), same as purchaser claim
  - If RECs are not contracted for or purchased, electricity purchased from the hosted system has no attributes to form the basis of a claim

Making Environmental Claims

- **Explain Green Power & the Environmental Benefits**
  - Most have a limited understanding of green power and its benefits
  - Provide simple information about the difference you will make
- **Make Your Message Tangible**
  - Remember to use EPA's Green Power Equivalency Calculator
- **More information is available on the GPP web site**
  - www.epa.gov/greenpower/pubs/comm.htm

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Market Standards & Guidance

- **EPA's GPP provides credible minimums for Partners**
- **Certification is increasingly popular**
  - States must certify generators for RPS eligibility
  - RECs must also meet state requirement for compliance
  - Certification is common practice for voluntary REC markets
    - ✓ Green-e is the largest independent certifier of RECs
    - ✓ 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
- **FTC wrote the Green Guides for environmental claims**
- **WRI / WBCSD and ISO set GHG accounting standards**

Market Standards & Guidance: GHG Accounting

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- **RECs enable claims of buying zero-emission renewable electricity**
  - Enable adjustments to indirect emissions (Scope 2) from purchased electricity
- **GHG accounting standards recognize that emissions (and reductions) are rarely the responsibility of just one entity's operations**
  - The same emissions may be claimed by more than one entity as long as the emissions are claimed in different scopes
  - Double counting occurs when multiple entities claim the same emissions in the same scope

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Market Standards & Guidance: Double Counting

RE 201: Advanced Material

- **State RPS rules prohibit using a REC for compliance that is also sold or claimed in a voluntary market**
- **Certifiers of RECs, such as Green-e, also prohibit the double counting of RECs**
  - *Overt double counting* is the sale or use of a REC by more than one party
  - *Implicit double counting* is having more than one entity claiming the environmental attributes or benefits from a renewable energy resource
- **Standards clearly state that customer-sited generators cannot claim to be selling/supplying renewable electricity if they sell the RECs (in part or in whole)**

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Market Guidance Examples

RE 201: Advanced Material

- **Green-e Best Practices in Public Claims for S Photovoltaic Systems**
  - ‘Fundamental to this discussion is the agreed-upon definition of a REC as representing all of the “greenness” of electricity produced from renewable resources like PV. A REC includes everything that differentiates the effects of generating electricity with renewable resources instead of using other types of resources. It is important to remember that a REC also embodies the claim to the greenness attributes of renewable electricity generation, and only the ultimate consumer of the REC has rights to the claim; <u>once a producer or owner of a REC has sold it, rather than consuming it themselves, they have sold the claim and cannot truthfully state that they are using renewable electricity, or that the electricity that was produced with the REC is renewable</u>.’ www.green-e.org/learn_re_claims.shtml

Market Guidance Examples

RE 201: Advanced Material

- **Green-e strongly encourages marketers to investigate statements being made by generators about the electricity they are selling before contracting for the sale of RECs.**
  - While these generators have to attest that they have not made claims on the RECs, a determination by Green-e Energy staff that the RECs are being claimed due to statements made by generators and/or null power buyers, users or sellers will render such RECs ineligible.
  - To avoid this, it is in your best interest to proactively research counterparties' statements that may affect eligibility and educating your suppliers about the impact of marketing statements that create unintentional claims on the RECs.
- **FTC's Draft Revision to Green Guides**
  - "If a marketer generates renewable electricity but sells renewable energy certificates for all of that electricity, it would be deceptive for the marketer to represent, directly or by implication, that it uses renewable energy." p. 223, www.ftc.gov/os/fedreg/2010/october/101006greenguidesfrn.pdf

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Double Counting Risks

- **Failure to comply with industry standards and expectations may result in the following:**
  - REC ineligibility for use in compliance markets
  - REC ineligibility for independent certification
  - Inability to sell (or at least lower retail value for) RECs identified as non-compliant with industry standards
    - ✓ Example: Texas issuance of one REC and one Compliance Certificate for each MWh of non-wind generation resulted in decreased demand and exclusion from Green-e certification
  - Reduced interest or higher electricity contract prices from RE developers

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Observations on Renewables

- **Renewables are an important energy supply option**
  - Can sustainably meet a portion of future energy demand with little impact on atmosphere & human health
  - Can avoid several negative impacts of energy generation: air and water pollution, vulnerability to supply disruptions, and fossil fuel extraction through mining and drilling
- **They face unique cost barriers** (grid integration, transmission capacity limitations, and uncertain policy incentives)
  - RECs help address several of these barriers by monetizing the value of attributes separately from commodity electricity, which provides an additional revenue stream to support projects

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Example: Project Costs & Revenues

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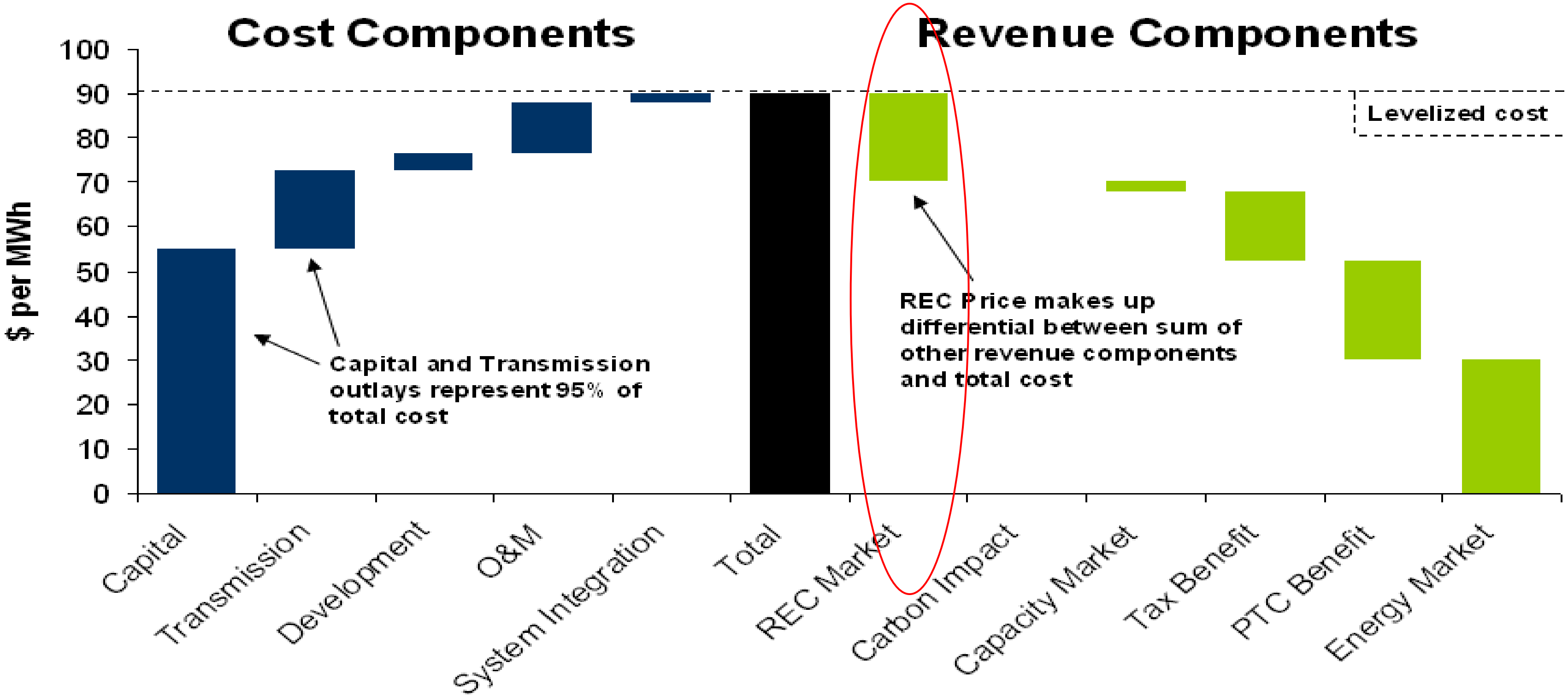
- Renewables use tax credits, accelerated depreciat[ion], RECs (voluntary & RPS) to bridge the gap between costs and power sales revenue.

Project Economics for Wind Facilities



How RECs Help?

- **RECs monetize value of attributes separate from commodity electricity and …**
  - Provide additional revenue stream to support projects
  - Bypass problems of intermittency and load matching
    - ✓ Can be sold across geographic boundaries
    - ✓ Avoids cost of "wheeling" power across control areas
  - Lower consumers' transaction costs and address needs for flexibility and liquidity
  - Create national voluntary market
    - ✓ Enable consumers to support RE, even when their utility doesn't offer a green choice
    - ✓ Lower green power premiums

How RECs Help (continued)?

- **Without RECs, buyers would...**
  1. Contract directly for delivery of the electricity and then
  2. Audit transactions to prove ownership and consumption
- **This would...**
  1. Severely limit the market for green power resources and buyers
  2. Increase transmissions costs for delivering renewable energy
  3. Increase verification and compliance costs

Credibility and Value

- **RECs work much like money**
  - Paper currency works because everyone accepts it, and we trust that it is backed by the government
  - Similarly RECs are a currency that works only if it is backed by a shared trust in what the REC represents
- **Value is in exclusive ownership**
  - If one entity uses the REC to “pay” for a claim, and the REC is also sold to another entity, it is the equivalent of counterfeit money
  - If counterfeit money is in circulation, trust and credibility is lost
- **Certification and tracking systems help establish the value of renewable energy and increase consumer confidence in renewable energy**

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Support for Buyers and Sellers

- **Center for Resource Solutions**
  - Green-e Energy for sellers
  - Green-e Marketplace for purchasers
- **US Dept of Energy's Green Power Network**
  - Up-to-date information on green power providers, product offerings, consumer protection issues, & policies affecting green power markets
- **US EPA's Green Power Partnership**
- **Regional tracking systems**
  - Tracking systems provide a basis for creating, managing, and retiring RECs, ensuring that each REC is counted only once

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