

Renewable Energy Certificates (“Green Tags”)

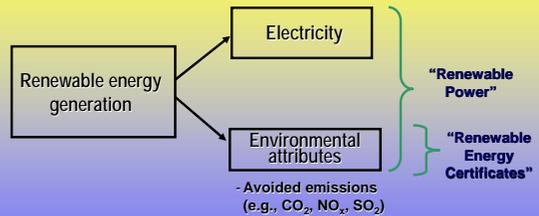
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- Green Tags 101
- Federal Procurement Options
 - Western Area Power Administration’s New Federal Renewable Program
- Purchase Examples
- Reminder – Why Renewables are Important

Renewable Energy Certificates (RECs)

- A renewable power purchase option developed in 2000
- Also referred to as Green Tags, Tradable Renewable Certificates, Green Energy Certificates/Credits, etc
- A renewable energy facility produces two distinct products, sold separately:
 - Generic electricity (sold into the local grid)
 - RECs (the environmental and other attributes)
- Utility provider and bill does not change

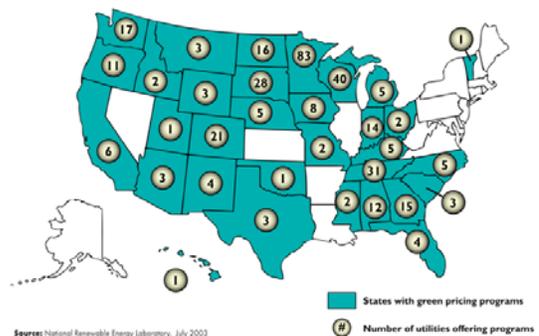
REC Diagram

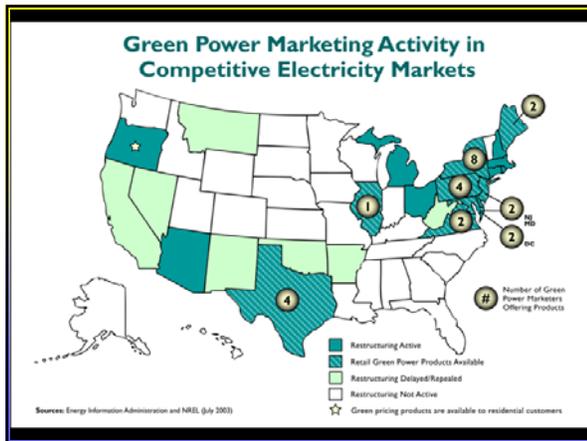


RECs vs Other Purchase Options

Other Purchase Options	RECs
Purchase from utility or competitive electric supplier	Purchase from REC supplier
Limited availability	Available anywhere
One bill in most cases	Separate bills
Multiple transactions for many sites	One transaction for many sites possible

Utility Green Pricing Activities





2003 Energy RECs - Pros

- Available anywhere
- Do not need to change electricity suppliers
- Option for leased facilities that don't pay their utility bill
- Possibly (but not always) the lowest cost option, since scheduling costs and (most) transmission are eliminated
- Regional, even national purchases are possible - reduces administrative requirements

2003 Energy RECs – Cons

- Difficult to explain, but has gained visibility & recognition
- Funding
 - Separate bill (not part of the utility bill)
 - “Color of money”
- Generation location restrictions, depending on goals (local economic development, local air pollution vs. climate change)
- Constant price product – no protection from price volatility
 - Preliminary discussions regarding variable price product that is linked to some electricity or natural gas price index

2003 Energy Wholesale vs. Retail

- Retail – customer purchases RECs only, no associated kWh
- Wholesale
 - Renewable Portfolio Standard (RPS) compliance tracking (TX, NE, possibly other states/regions)
 - “Green pricing” programs (NY, OR)
 - Renewable portion of competitive electricity product

2003 Energy Green-e Certification

- Voluntary certification and verification program run by Center for Resource Solutions (CRS), a non-profit
- Code of Conduct
- Annual audit
- REC product must be 100% new - defined as January 1, 1999 in most regions
- REC supplier list - http://www.green-e.org/your_e_choices/trcs.html

2003 Energy Supplier & Product Information

- Over 20 providers (retail and wholesale)
 - <http://www.eere.energy.gov/greenpower/certificates.shtml>
- Evolution Markets REC web site
 - Most < 1¢/kWh (except New NY, PJM and TX wind from 1.3 to 1.6 ¢/kWh and New solar at 8¢/kWh)
 - Register for data access
 - <http://www.evomarkets.com/evoid/index.php?mm=open>
- Green Power Network - 1.5 – 4¢/kWh (“off-the-shelf” products)
 - http://www.eere.energy.gov/greenpower/certif_summ.shtml

Bonneville Environmental Foundation (BEF)
(on behalf of Pam Field, original panel speaker)



- Independent non-profit established 1998 (**not** part of BPA)
- One of first REC suppliers
- REC supply – BPA, PPM, NW Solar Coop, independent solar projects
- REC supplier for EPA Manchester, WA laboratory
- <http://www.b-e-f.org>

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Procurement Options



- Defense Energy Support Center (DESC)
 - Current RFP for EPA Research Triangle Park, NC facility
- General Services Administration (GSA)
 - Four EPA sites
 - GSA Supply Schedule a future option?
- Western Area Power Administration (“Western”)
 - New federal renewable program!
- Bonneville Power Administration (BPA)
- Tennessee Valley Authority (TVA)

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Western’s Federal Renewable Program
Background

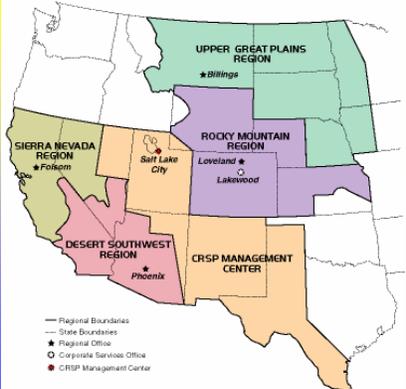


- DOE Secretary Abraham directed Western to develop green tags/renewable power program (June 2002)
- Economy Act - limited legal authority for Western to purchase power for federal agencies
- Three products – Renewable Power, Supplemental Energy, RECs
 - Initial marketing focused on Western allocation customers, but RECs available to any federal agency



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Western’s Territory

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Program Steps



- Sign non-binding Statement of Intent
- Renewable requirements aggregated and Western issues RFP (must be in Western’s territory)
- Renewable contract signed
- Federal/Western contract signed
- Recognition!



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Some Principles



- Western acquires renewables upon request from the agencies, not in advance of request.
- Cost for the renewable power is paid by those requesting the services.
- The purpose is not to compete with the private sector, but to offer renewable energy options.
- Services provided at Western’s cost.
- Benefits retained by customers.
- No resale of renewable resources.

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Federal REC Purchase Examples

- EPA Richmond, CA
 - Competitive electricity supply contract with SMUD (7/99)
 - Converted to REC after California “meltdown” with a price decrease (8/01)
- EPA Manchester, WA (5/00)
 - One of the first federal REC purchases
 - Structured as BEF grant

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Federal REC Purchase Examples

- EPA Chelmsford, MA (8/00) – Green Mountain Power (the Vermont utility, not the renewable supplier)
- EPA Cincinnati, OH (8/01) – Community Energy
- EPA Houston, TX (6/03) – 3 Phases Energy
- Air Force – Ellsworth, SD and Warren, WY through Western

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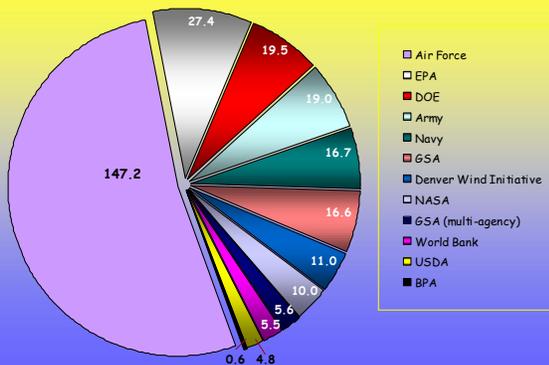
Why Are Renewables Important?

- National security
- Fuel diversity
- Electricity and natural gas price volatility
- Economic development
- Environmental protection
- EO 13123 goal (2.5% by 2005)

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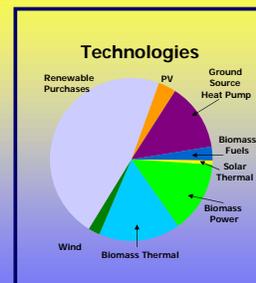
Federal agencies are buying Renewable Power

As of 3/03



Progress Towards Federal Renewables Goal (February 2003)

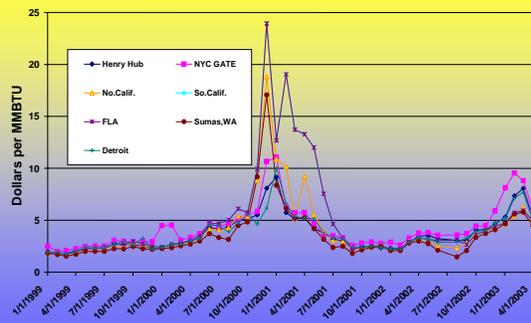
Solar Thermal	6.5 GWh
Biomass Power/CHP	92.5 GWh
Biomass Thermal	108.5 GWh
Wind	14.1 GWh
Renewable Purchases	294.0 GWh
Photovoltaics (PV)	23.5 GWh
Ground Source Heat Pump	88.8 GWh
Biomass Fuels	18.0 GWh
Total	645.9 GWh



Data as of 2/03



Selected Natural Gas Prices



Sources: History: EIA; Projections: Short-Term Energy Outlook, May 2003



Conventional Power Plant Water Usage



- Water used for cooling & lost through evaporation:

- Nuclear	.62 gallons/kWh
- Coal	.49 gallons/kWh
- Oil	.43 gallons/kWh
- Combined Cycle Gas	.25 gallons/kWh

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Thank You!