Green Power: An Environmental Choice for Municipal Governments

U.S. EPA's Green Power Partnership

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Clean Energy-Environment Municipal Network Webinar

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The Key Questions

- Why should my municipality buy green power?
  - “Electricity is electricity, right?”
- What are my green power options?
  - “Are there different technologies or products?.”
- How do I buy green power?
  - “My utility doesn’t offer green power. Now what?”
- How much will green power cost?
  - “Does is cost more?”
- How can EPA provide assistance?
  - “How do tell our constituents about this?”

What is Green Power?

- Green power is an “environmentally-differentiated” electricity product from:
  - solar.
  - wind.
  - geothermal.
  - biomass.
  - biogas.
  - small hydro.

Green Power Benefits

- Environmental:
  - Reduce greenhouse gases (GHGs).
  - Reduce criteria pollutants.
  - Water conservation.
- Energy Price Stability/Reliability:
  - Electricity price stability.
  - On-site systems can reduce T&D requirements.
  - Reduced demand for natural gas lowers prices.
- Economic Development:
  - Job creation.
  - Landowner lease payments ($2000-$5000/wind turbine).
  - Tax revenues (often in rural areas that need them).

Value for Local Governments?

- Helps achieve environmental objectives.
  - Directly addresses climate change.
- Provides high-value/investment.
  - Deploys quickly & scales up easily.
  - Resonates with stakeholders.
- Captures favorable media attention.
  - = Clean technology.
  - = Domestic energy supply.
  - = New U.S. jobs.
- Manages risk.
  - Diversifies generation portfolio.
  - Hedges against unstable or rising fossil fuel prices.
  - Reduces the risk of disruptions in fuel supplies.

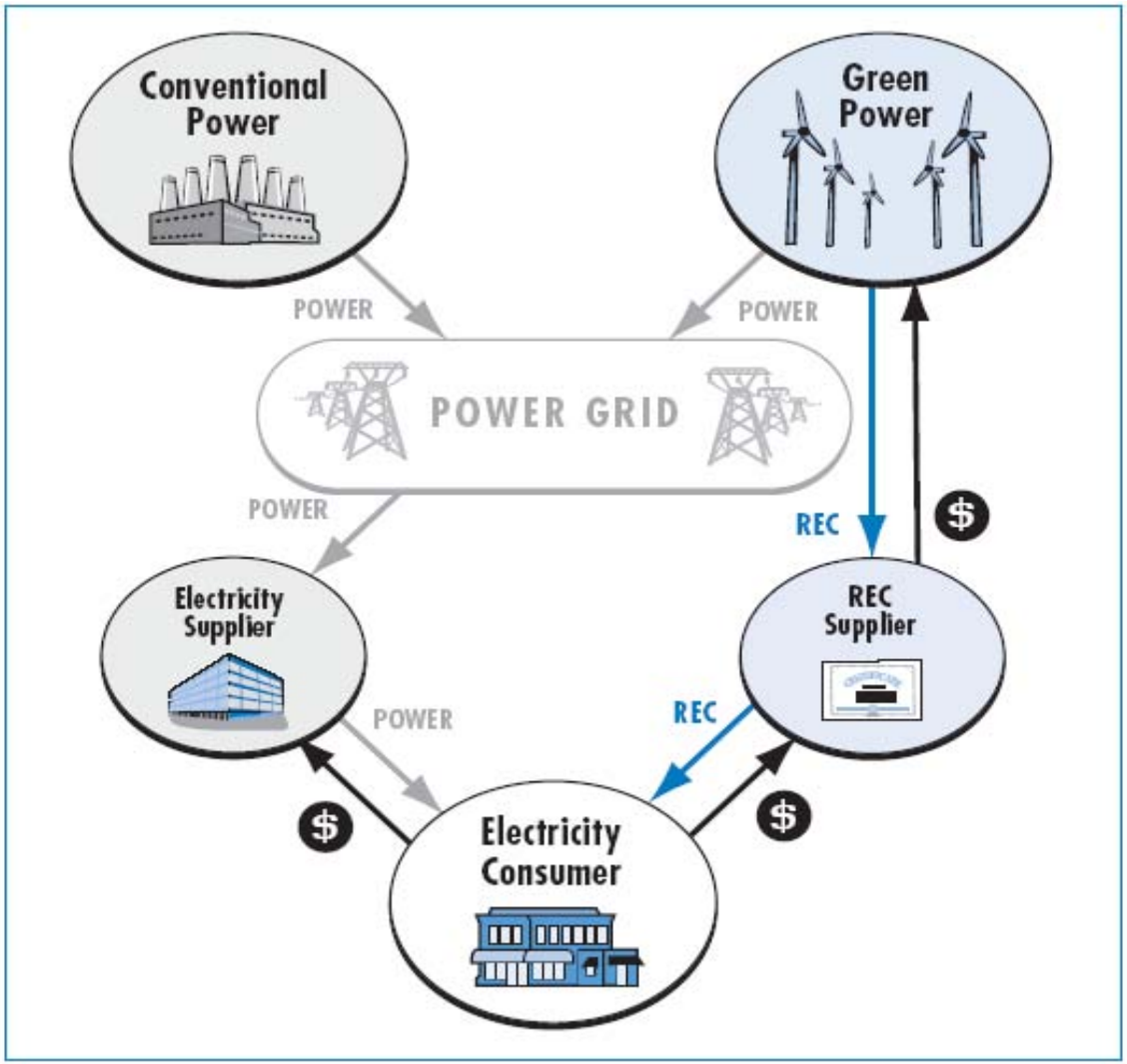
Buying Green Power – Product Options

- Green Power Electricity Products.
  - Buy electricity from utility green pricing programs or green power retail marketers that is all, or partially, generated from renewable sources.

- Renewable Energy Certificates (REC).
  - Buy only the environmental “attributes” associated with the electricity generated (1 REC = 1 MWh).

- On-site Generation.
  - Install renewable energy system on-site (e.g. solar panels, wind turbines).

REC Transaction Process



Buying Green Power REC Benefits

- Availability.
  - Even if local power provider has no green power options.
- Flexibility.
  - Type of renewable resources.
  - Volumes purchased.
  - Location of resource.
  - Leased space.
  - Simplicity for companies with locations across multiple states.

REC Wholesale Pricing Data for New Renewables by Region ($/MWh)

Location	Wind	Solar	Biomass	Small Hydro
California	$1.75-$2.00		$1.50	
Western States (WECC)	$1.25-$7.50	$30.00-$150.00	$1.50-$3.50	
Central U.S.	$2.00-$5.50		$1.50	
PA, NJ, MD (PJM)	$15.00-$17.00	$80.00-$200.00	$4.00-$5.00	
New York	$15.00-$16.00		$6.00	
New England (NEPOOL)	$35.00		$45.00	$5.00
Southwest (SPP)	$2.50-$5.00			
Southeast			$3.50	

Source: From the National Renewable Energy Laboratory (NREL) 2005 report http://www.eere.energy.gov/greenpower/resources/pdfs/37388.pdf

Note: The Texas (ERCOT) market is not represented in this chart.

Price Premiums for Utility Green Power Products (cents/kWh)

	2000	2001	2002	2003	2004	2005	2006
Average Premium	3.48	2.93	2.82	2.62	2.45	2.36	2.12
Median Premium	2.50	2.50	2.50	2.00	2.00	2.00	1.78
Range of Premiums	(0.5)-20.0	0.9-17.6	0.7-17.6	0.6-17.6	0.3 - 17.6	(0.7)-17.6	(0.1)-17.6
10 Programs with Lowest Premiums*	(0.5)-2.5	1.0-1.5	0.7-1.5	0.6-1.3	0.3-1.0	(0.7)- 0.9	(0.1)-1.0
Number of Programs Represented	50	60	80	91	101	104	97

Green Power Partnership Overview

- Same EPA program family as ENERGY STAR & Climate Leaders.
- Voluntary program in which partners use green power to meet a portion of their electricity needs.
  - Partners have one year from joining to make a qualifying green power purchase.
- More than 950 partners are purchasing more than 14.3 billion kWh of green power annually.

Partnership Offerings & Benefits

- Credible Benchmarks.
  - Metric for “How much green power is enough?”
  - Definition of eligible renewables.
- Planning & Implementation Resources.
  - Green power locator www.epa.gov/greenpowerpubs/gplocator.htm
  - Purchasing guidance.
  - Marketing and communications support.
  - Environmental impact information.
- Recognition.
  - Top 25 and Top 10 lists.
  - Green Power Leadership Awards.
  - Promotional opportunities .
  - Use of the Partnership logo.

EPA GREEN POWER PARTNER

Purchasing Requirements

Annual Electricity Use (MWh) *	Minimum Purchase Requirements**	Leadership Club Requirements
> 100,000	2%	20%
100,000 to 10,001	3%	30%
10,000 to 1,001	6%	60%
< 1,000	10%	N/A

Note: A Partner must meet the purchase requirements for all of its U.S. facilities to be in the Leadership Club.
*Customers with annual load less than 1,001 MWh are not eligible for the Green Power Leadership Club. EPA will recognize Partners separately who fall in this size category and purchase 100% green power.
**The Leadership Club purchase requirement must be met with "new" renewables.

Which Local Governments Buy?

- **The Top 10 Local Government Partners (by purchase size).**

1.	Dallas, TX	333,660 MWh
2.	Houston, TX	262,800 MWh
3.	Los Angeles County Sanitation Districts, CA	171,144 MWh
4.	Washington Suburban Sanitary Commission	70,000 MWh
5.	San Diego, CA	66,618 MWh
6.	Montgomery County Wind Buyers Group, MD	65,900 MWh
7.	Austin, TX	58,711 MWh
8.	Austin Independent School District	45,720 MWh
9.	San Jose/Santa Clara Water Pollution Plant	44,757 MWh
10.	Nassau County, NY	39,123 MWh

- **EPA partners with 80 local governments in total.**

Sampling of Green Powered Local Governments:

Washington Suburban Sanitary Commission.

- Signed a 10-year, fixed-price contract for wind power.
  - Receive 85 percent of the wind project's power output.
  - Expects to save $20 million in energy costs over the length of our contract.

Bellingham, Washington.

- Green Power = Leadership by Example.
  - Purchasing RECs for 100% of municipal power needs.
  - Launched Green Power Community Challenge: 2,312 households and 127 businesses enrolled.

San Diego, California.

- Commitment to produce 50 MW of renewable energy.
  - Onsite portfolio includes hydro, landfill gas, and solar.
  - Currently generating over 66 million kWh of green power.

Environmental Benefits of Local Government Partners' Purchases

80 Local Government Partners with green power purchases totaling more than 1.4 billion kWh.

- Purchases avoid ~ 1.2 million tons of CO_2 emissions, which is equivalent to:
  - The greenhouse gas emissions from 205,000 passenger vehicle cars.
  - The CO_2 emissions from 2.6 million barrels of oil consumed.
  - The CO_2 emissions from the electricity use of 148,000 average American homes for one year.

EPA Green Power Communities

- Communities (government, commercial, residential) collectively buy green power to meet EPA's benchmarks.
  - Local government must be a Green Power Partner.
  - Local government (or local utility) provides data on benchmark and campaign progress .
- Campaign is an important sales tool for energy providers.
  - Lowers acquisition costs for residential and small commercial.
  - Can create friendly competition between two or more communities.
  - Enhances working relationships between localities, environmental groups and green power providers.
- Localized market transformation opportunity.

Green Power Community Sign

- Highlights a successful campaign.
  - Each Community receives two.
  - Stickers with year will signify Community meets guidelines.
  - Designed for outdoor display.
- Other Recognition.
  - Artwork for Community Banner.

Boulder Green Power Community

- “Boulder Wind Challenge” is a collaborative effort between the City of Boulder, Western Resource Advocates, and four providers.
- Challenge resulted in 1,150 new wind power subscribers, which is over twice the initial goal of 500.

City of Boulder — Public Affairs Division

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News Release

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Boulder exceeds goals of Wind Challenge; Becomes Green Power Community

The Boulder Wind Challenge ended on Oct. 31 with 1,150 new wind power subscribers, which is over twice the initial goal of 500. Challenge subscribers purchased almost sixteen million kilowatt-hours of renewable energy, which has the same environmental benefits as taking 2,440 cars off the road for a year and saving 92 acres of trees from deforestation. Due in part to the challenge's success, the Environmental Protection Agency (EPA) has designated Boulder a Green Power Community, the first community in Colorado to receive this designation.

"We're very proud of the Boulder community for showing their commitment to clean en… than doubling the challenge goal," said Carolyn Weinreich, city of Boulder Office of F… …coming a Green Power Community shows our environmental leadership…

EPA Green Power Communities

- Alta, Utah.
- Beaverton, Oregon.
- Bellingham, Washington.
- Bend, Oregon.
- Boulder, Colorado.
- Cannon Beach, Oregon.
- Corvallis, Oregon.
- Gresham, Oregon.
- Lacey, Washington.
- Lincoln City, Oregon.
- Moab Area, Utah.
- Palo Alto, California.
- Park City, Utah.
- Salem, Oregon.
- Santa Clara, California.
- Swarthmore, Pennsylvania.

Want to Know More?

- Basic Information.
  - An overview of Green Power Partnership is available on EPA's Web site: www.epa.gov/greenpower
  - To see EPA's Top 10 Local Government Partners, please visit: http://www.epa.gov/greenpower/toplists/top10localgov.htm
  - To see EPA's Green Power Communities, please visit: http://www.epa.gov/greenpower/toplists/communities.htm
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