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Frankfort, KY 40602-0634  
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www.stites.com

RECEIVED

JUN 27 2008

PUBLIC SERVICE  
COMMISSION

June 27, 2008

**HAND DELIVERED**

Stephanie Stumbo  
Executive Director  
Public Service Commission of Kentucky  
211 Sower Boulevard  
P.O. Box 615  
Frankfort, KY 40602-0615

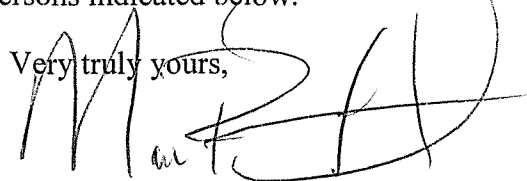
Mark R. Overstreet  
(502) 209-1219  
(502) 223-4387 FAX  
moverstreet@stites.com

**RE: P.S.C. Case No. 2008-00151**

Dear Ms. Stumbo:

Please find enclosed and accept for filing the original and ten copies of Kentucky Power Company's Responses to the data requests arising from the June 4, 2008 informal conference in this matter. A copy is being served on the persons indicated below.

Very truly yours,



Mark R. Overstreet

cc: Michael L. Kurtz  
Lawrence W. Cook

KE057:00KE4:16850:1:FRANKFORT

BEFORE THE  
PUBLIC SERVICE COMMISSION OF KENTUCKY

RECEIVED  
JUN 27 2008  
PUBLIC SERVICE  
COMMISSION

IN THE MATTER OF:

THE APPLICATION OF KENTUCKY )  
POWER COMPANY FOR APPROVAL OF ) CASE NO. 2008-00151  
ITS GREEN PRICING OPTION RIDER )  
(RIDER G.P.O.) )

KENTUCKY POWER COMPANY RESPONSES TO  
COMMISSION STAFF DATA REQUESTS OF THE  
JUNE 4, 2008 INFORMAL CONFERENCE

June 27, 2008



## **Kentucky Power Company**

### **REQUEST**

Please describe the manner in which KPCo will be able to document that the RECs it purchases meet the criteria of the proposed rider. Will there be documentation that KPCo can provide to the Commission? If so, please provide a sample of the type of documentation available.

### **RESPONSE**

Kentucky Power Company will be able to document that the Renewable Energy Certificates ("RECs") it purchases meet the criteria of the proposed Green Pricing Option (GPO) rider. When purchasing RECs, KPCo will verify information from the counterparty to confirm that the REC and its attributes meet the criteria of the GPO rider. Any purchases KPCo enters into will be prudently researched and documented.

As part of the purchase agreement, the party would be required to comply with all requirements of the Green Pricing program by supplying proper documentation to "attest to" the attributes of the REC.

Attached is an example of an Attestation form typical of what may be provided to the purchaser of a REC.

**WITNESS:** David M Roush



**EXAMPLE ATTESTATION**

I, \_\_\_\_\_, as the authorized representative of [Company Name] ("Seller") declare that Seller hereby sells, transfers and delivers to Buyer the Product (including, unless otherwise specified, all Environmental Attributes and Product Reporting Rights) associated with the generation and delivery of energy to Buyer from the Renewable Energy Facility as described below, in the amount of one REC for each megawatt hour generated as Delivery of [Product], as said term is defined in the Product Order with a Trade Date of \_\_\_\_\_, 20\_\_ with Buyer pursuant to a Master Renewable Energy Certificate Purchase and Sale Agreement (the "Agreement") with Buyer dated \_\_\_\_\_ (initially capitalized terms defined in the Agreement and Schedule P thereto), and that the RECs sold hereunder:

1. were generated by the following Renewable Energy Facilities and sold, subject to receipt of payment, to Buyer;
2. qualify as [Product] as of the Trade Date;
3. are solely and exclusively owned by Seller;
4. They have not been used by Seller or any third party to meet the RPS or other Applicable Program requirements in another state or jurisdiction;
5. were delivered into the [Delivery Area (e.g. PJM Control Area (as defined by PJM))] and complied with [PJM] energy delivery rules;
6. were not sold to any end-use customer or other wholesale provider other than Buyer during the calendar/Reporting Year; and,
7. were not used on-site for generation.

Generator Name or Designation	Technology Type	Fuel Type	Generator Location	EIA #	[Product]	Start and End Dates

\* must conform to the Product Order

As an authorized representative of Seller, I state that the above statements are true and correct to the best of my knowledge. This Attestation may serve as a Bill of Sale to confirm, in accordance with the Agreement, the transfer from Seller to Buyer all of Seller's right, title and interest in and to the Product as set forth above.

Name: \_\_\_\_\_ Date \_\_\_\_\_  
 [notarize if required]

This Attestation may be disclosed by Seller and Buyer to others, including the Administrator, Verification Provider, Certification Authority and the public utility commissions having jurisdiction over Buyer, to substantiate and verify the accuracy of the Parties' compliance, advertising and public claims.



## Kentucky Power Company

### REQUEST

In his testimony, Mr. Roush explains that the Company will inform customers of the Green Power Option Rider via messages printed on customer bills, bill inserts, Consumer Circuit pamphlet in customer's bill, and the Company's website. Please provide examples. Additionally, please state whether or not the Company will be able to utilize current planned advertising venues with an "add-on" message informing customers of the availability of the Green Power option.

### RESPONSE

Please see the attachment (total of 5 pages). Page 1 is the October 2007 AEP Ohio customer bill insert. Pages 2 and 3 are the AEP Ohio *Consumer Circuit* pamphlets included with customer bills in August 2007 (page 2) and September 2007 (page 3). Page 4 is the opening page of the AEP Ohio website showing Green Pricing Option information under the heading "What's happening at AEP Ohio". When the Green Pricing Option is selected, the website offers a secure connection where customers can read about the Green Pricing Option and initiate participation. Page 5 is the opening page of the Kentucky Power website where similar information about the Green Pricing Option would be communicated and where customers could initiate participation. Written communications similar to page 1 through page 3 would be developed for Kentucky Power customers and enclosed with monthly bills.

Yes, the Company will be able to utilize current planned advertising venues with an "add-on" message informing customers of the availability of the Green Tariff Option.

**WITNESS:** David M Roush

FRONT

BACK

## GREEN PRICING OPTIONS

**Remember – You can support renewable energy**  
Don't forget that AEP Ohio is now offering a program that makes it easy for customers to support renewable resources. The new Green Pricing Option program helps customers make a difference in the environment by supporting the Company's purchase of Renewable Energy Certificates (RECs) that come from renewable sources of electric power generation, such as landfill gas.

**Here is how the program works**  
AEP Ohio recently acquired RECs and rebundled them into Green Product blocks. Each block costs \$0.70 and is equivalent to 100 kilowatt-hours (kWh) of renewable electricity. Customers must agree to purchase at least two blocks of the Green Product. Customers may participate through a one-time purchase, or establish an automatic monthly purchase agreement.

For just a minimum of \$1.40 per month (2 blocks @ \$0.70 each), customers can support the Green Pricing Option. And for \$7.00 per month (10 blocks) the Green Product monthly purchase represents 100 percent of the average residential customer's monthly usage (approximately 1,000 kWh).

When customers purchase the Green Product blocks, they are supporting AEP Ohio's acquisition of RECs. Their purchase will take place in addition to their regular monthly electric bill. They will not receive any additional electricity from

their purchase of the Green Product; however, they are helping to sustain a market for the environmental attributes of renewable power generation.

### What is a REC?

When a renewable energy generator—for example, a wind power generator—produces one megawatt hour of electricity that is certified and sold into the electricity market, it produces a REC. That REC is then sold to a buyer, such as an individual or an organization. AEP Ohio recently purchased more than 50,000 RECs through a competitive bidding process. In this way, REC buyers are helping to support the generation of renewable energy.

**Here is how to enroll in the Green Pricing Option**  
Customers can enroll in the Green Pricing Option today by calling AEP Ohio's 24-hour Customer Solutions Center toll-free at 1-800-277-2177, or by visiting the Company's website at [www.AEPOhio.com](http://www.AEPOhio.com)



*A unit of American Electric Power*

October 2007

Customer Bill Insert

**AEP**  
**OHIO**

*Division of American Electric Power*

# consumer circuit

*AEPOhio.com*

*August 2007*

## **AEP Ohio customers can go green!**

Coming this September, AEP Ohio is rolling out a new program that will make it easy for customers to support renewable resources. The new Green Pricing Option program will help customers make a difference in the environment by supporting the Company's purchase of Renewable Energy Certificates, which come from renewable resources like wind, solar, and landfill gas.

### **How does it work and how do customers enroll in the Green Pricing Option?**

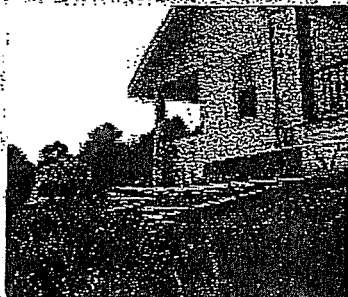
When you sign up for the Green Pricing Option, we will match your desired participation level with clean energy attributes from renewable resources. Participation does not impact your current electricity service. AEP Ohio will continue to be responsible for the delivery of power to your home.

Because there is an additional cost for these renewable resources, customers will pay a slightly higher price to participate in this voluntary program. Look for pricing and enrollment details in the September issue of *Consumer Circuit*.

### **Reporting electrical hazards**

We all know what to do when the power goes out — call the electric company. You can also report other problems or hazardous conditions such as leaning poles, fallen wires, sparking transformers or suspicious activities at electric company substations.

Reports can be called into the Customer Solutions Center number on your bill or entered at our company Web site, [AEPOhio.com](http://AEPOhio.com). We appreciate your assistance in helping us keep the power on and the public safe.



### **Dog days of summer**

Pets make great family friends. But they can pose a safety hazard to electric company employees who may need to enter your property to read a meter or perform other duties. You can help reduce the incidence of dog-bite injuries by securing your pet indoors on the day your meter is scheduled to be read. You can find the "next read date" on your electric bill.

*Customer Service is available 24 hours a day, seven days a week at [www.AEPOhio.com](http://www.AEPOhio.com) or 800-277-2177 (CSP), 800-672-2231 (OP).*



# CONSUMER CIRCUIT

AEPOhio.com

September 2007

## Green pricing option for AEP Ohio customers

Coming this September, AEP Ohio is rolling out a new program that will make it easy for customers to support renewable resources. The new Green Pricing Option program will help customers make a difference in the environment by supporting the Company's purchase of Renewable Energy Certificates, which come from renewable resources like wind, solar, and landfill gas. ❖

### How the program works

AEP Ohio recently acquired RECs and rebundled them into Green Product blocks. Each block costs \$0.70. Customers must agree to purchase at least two blocks of the Green Product. Customers may participate through a one-time purchase, or establish an automatic monthly purchase agreement.

For just a minimum of \$1.40 per month (2 blocks @ \$0.70 each), customers can support the Green Pricing Option. And for \$7.00 per month (10 blocks) the Green Product monthly purchase represents 100 percent of the average residential customer's monthly usage.

This is a voluntary program. Participation does not impact a customer's current electricity service. AEP Ohio will continue to deliver electric power to the customer's home.

When customers purchase the Green Product blocks, they are supporting AEP Ohio's acquisition of RECs. Their purchase will take place in addition to their regular monthly electric bill. They will not receive any additional electricity from their purchase of the Green Product; however, they are helping to sustain a market for the environmental attributes of renewable power generation. ❖

### What is REC?

When a renewable energy generator—for example, a wind power generator—produces one megawatt hour of electricity that is certified and sold into the electricity market, it produces a REC. That REC is then sold to a buyer, such as an individual or an organization. AEP Ohio recently purchased more than 50,000 RECs through a competitive bidding process. In this way, REC buyers are helping to support the generation of renewable energy. ❖



### How do customers enroll in the green pricing option?

Customers can enroll in the Green Pricing Option beginning in September. Enroll by calling AEP Ohio's 24-hour Customer Solutions Center toll-free at 1-800-277-2177, or by visiting [www.AEPOhio.com](http://www.AEPOhio.com). ❖

### Safety tip

Get ready for fire prevention week, October 7-13. Have a qualified electrician inspect the circuits in your home to help prevent electrical fires. The National Fire Protection Association Web site has more fire safety tips at [www.nfpa.org](http://www.nfpa.org). ❖



Customer Service is available 24 hours a day, seven days a week at [www.AEPOhio.com](http://www.AEPOhio.com) or 800-277-2177 (CSP). 800-672-2231 (OP).





**Online energy calculators** show you how your home uses electricity, and give you the power to save.

[LEARN MORE](#)

### Your Approximate Energy Costs

#### Your House (Sample)



Annual  
\$2,770

Monthly  
\$231

## Report Trouble

Please select...

Visit our [storm & outage center](#).

## Your Account

[Log in / Register](#)

### What's happening at AEP Ohio

What to do during a power outage - AEP Ohio is dedicated to providing you with a reliable electric supply. However, despite our best efforts, severe weather could interrupt your electric service. AEP Ohio encourages customers to have an emergency kit prepared and provides guidance on what to do if a power outage occurs.

Green Pricing Option: Many of our customers have asked us for a way they can help support renewable power through their electricity use. Now Ohio is offering you the opportunity to encourage the generation of renewable energy, through the purchase of Renewable Energy Certificates.

### Service Highlights

VIDEO: Electrical Safety for Contractors - If you work around electricity, you need to watch this video for important electrical safety information.

Facing disconnection? An AEP Ohio Payment Agreement allows customers to use an installment plan to bring their account up-to-date.

Go Paperless...Receive your bill online. Save paper, get an email notice when your bill is ready, and view it 24/7.

AEP Ohio rate calculation worksheet. Find out how the rate stabilization plan will affect your business in 2006-08.

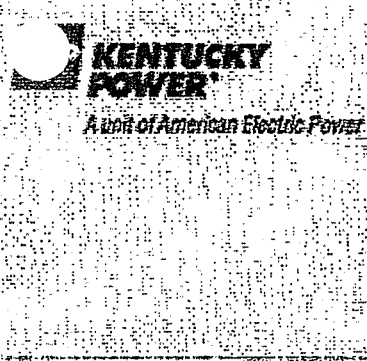
## Customer Service

- [Pay your bill](#)
- [Paperless billing](#)
- [Learn how to save energy](#)
- [Start service](#)
- [Stop service](#)
- [View your bill](#)
- [More Customer Service functions](#)

## Your Safety

- [Call 811 before you dig.](#)
- [Downed Power Lines can cause serious injury or even death.](#)
- [More safety information](#)

[Advanced search](#)



**Online energy calculators**  
Show you how your home  
uses electricity, and give  
you the power to save.

[LEARN MORE](#)

### Your Approximate Energy Costs

Your House (Sample)

	<b>Annual</b>	<b>Monthly</b>
	\$2,770	\$231

## Report Trouble

Visit our [storm & outage center](#)

Please select...

### What's happening at Kentucky Power

**What to do during a power outage** -- Kentucky Power is dedicated to providing you with a reliable electric supply. However, despite our best efforts, severe weather could interrupt your electric service. Kentucky Power encourages customers to have an emergency kit prepared and provides guidance on what to do if a power outage occurs.

**We're part of a strong community:** Volunteering, educating kids on electrical safety or supporting local causes, our people make a difference.

**Looking for a business?** Kentucky Power has award-winning economic development resources at your service.

### Service Highlights

**VIDEO: Electrical Safety for Contractors** -- If you work around electricity, you need to watch this video for important electrical safety information

**Save energy (and money)** -- Kentucky Power gives you tips to help you reduce energy use and save money on your energy bills.

**Go Paperless...** Receive your bill online. Save paper, get an email notice when your bill is ready, and view it 24/7

## Your Account

[Log in / Register](#)

## Customer Service

- [Pay your bill](#)
- [Paperless billing](#)
- [Learn how to save energy](#)
- [Start service](#)
- [Stop service](#)
- [View your bill](#)
- [More Customer Service functions](#)

## Your Safety

- [Call 811 before you dig.](#)
- [Downed Power Lines](#) can cause serious injury or even death
- [More safety information](#)

[Advanced search](#)





## **Kentucky Power Company**

### **REQUEST**

Please provide support with respect to KPCo's \$2.00 per month charge for each fixed 100 kWh block under contract for an REC. Kentucky Power Company stated at the informal conference that other AEP affiliates had REC programs available to customers. (i.e. Appalachian Power, Indiana & Michigan Power, Ohio Power). Please explain those existing programs and explain why it may or may not be reasonable for Kentucky Power Company to follow those same procedures.

### **RESPONSE**

As stated in testimony of Witness Roush, and as noted in paragraph 7 of the Green Pricing Option (GPO) Application, in establishing the price of \$2.00 for the 100 kWh block of RECs, the current market for RECs was considered, as well as prices charged under similar programs. The price per block was then set at a level that would allow the tariffed price to stay the same for a reasonable period of time. In addition, the \$2.00 charge is intended to allow the Company to avoid adjusting the price frequently as the market price of RECs fluctuates. All monies collected under the GPO tariff will be used solely for the purchase of RECs, which may include broker administrative costs.

The primary consideration in establishing the price for the block of RECs was an evaluation of prices in the market, while taking into account the requirements of the GPO tariff and the territories where the RECs would be purchased, either in the SERC Reliability Corporation (SERC) or Reliability First Corporation (RFC), as stated in the testimony of Witness Roush.

Evolution Markets, which is the highest volume broker in the domestic REC market, produces a daily publication identifying current REC prices. In reviewing the REC prices published by Evolution Markets, RECs can fluctuate in a range anywhere from \$5 to approximately \$100 per MWh, with the median generally about \$20 (or \$2.00 per 100 kWh).

In Kentucky, LG&E's program contains a price equivalent to \$1.67 per 100 kWh for residential and \$1.30 per 100 kWh for commercial and industrial. TVA's price is equivalent to \$2.67 per 100 kWh and EKPC's price is equivalent to \$2.75 per 100 kWh.

**Other REC programs available to AEP affiliates**

Appalachian Power Company (APCo) has filed for approval of a "Green Pricing" tariff in West Virginia and plans to seek approval of a similar tariff in Virginia. AEP Ohio presently offers a "Green Pricing Option", which took effect in September 2007 and expires at the end of 2008. A copy of the Ohio and West Virginia filings are attached.

In Ohio, AEP Ohio prepurchased a significant amount of RECs at a favorable price. That purchase was treated as a regulatory asset. To the extent that voluntary enrollment does not consume the prepurchased amount, the Company may attempt to resell those RECs, but any cost remaining would be paid by Ohio customers.

In West Virginia, APCo has filed for a voluntary Green Pricing Option Rider for customers who wish to support the development of electricity generated by Renewable Resources, to be effective September 1, 2008. The Green Pricing Option Rider will allow individual customers to purchase 100 kWh blocks of Green Power each month.

Each of the AEP affiliated company programs is premised upon the same model. Each is voluntary and provides for purchase of RECs in 100 kWh blocks. The programs also employ the same definition of renewable resource. Kentucky Power's employment of a program similar to that used by its affiliates in other states allows the Company to take advantage of its sister-companies' experience and economies of scale in the purchase of RECs.

**WITNESS:** David M Roush

FILE

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2007 AUG 27 PM 2:53

American Electric Power  
1 Riverside Plaza  
Columbus, OH 43215  
AEP.com

PUCO

August 27, 2007

Ms. Renee J. Jenkins  
Secretary of the Commission  
Public Utilities Commission of Ohio  
180 East Broad Street  
Columbus, Ohio 43215-3793

Marvin I. Resnik  
Assistant General Counsel -  
Regulatory Services  
(614) 716-1606  
(614) 716-2950 (fax)  
miresnik@aep.com

RE: PUCO Case Nos. 89-6003-EL-TRF; 89-6007-EL-TRF; 06-1153-EL-UNC

Dear Ms. Jenkins:

Enclosed are four copies of Columbus Southern Power Company's and Ohio Power Company's tariffs reflecting the Green Pricing Option Rider approved in Case No 06-1153-EL-UNC. Columbus Southern Power Company's and Ohio Power Company's new riders are found at Original Sheets No. 79-1 and 79-1D of each of their tariffs. The other new pages consist of the Table of Contents and individual schedule sheets containing the table of applicable riders.

One copy of Columbus Southern Power Company's tariff filing should be filed in Case No. 89-6003-EL-TRF and one copy of Ohio Power Company's tariff filing should be filed in Case No. 89-6007-EL-TRF. One copy of each Company's tariff filing should be placed in Case No.06-1153-EL-UNC. Two copies of each Company's tariff filing have been designated for distribution to the Rates and Tariffs, Energy and Water Division of the Commission's Utilities Department.

The Companies will update their tariffs previously filed electronically with the Commission's Docketing Division.

Very truly yours,

Marvin I. Resnik

MIR:ms  
Enclosure  
cc: Parties of Record

This is to certify that the images appearing are an accurate and complete reproduction of a case file document delivered in the regular course of business.  
Technician ADW Date Processed 8/27/07

COLUMBUS SOUTHERN POWER COMPANY  
GREEN PRICING OPTION RIDER

Filed pursuant to Order in Case No. 06-1153-EL-UNC

COLUMBUS SOUTHERN POWER COMPANY

Original Sheet No. 79-1

P.U.C.O. NO. 6

GREEN PRICING OPTION RIDER

Availability of Service

Available to customers taking service under the Company's metered rate schedules. This Rider is not available to Percentage of Income Payment Plan customers.

Participation in this program is subject to the Company's ability to procure renewable energy certificates (RECs) from Green Resources through a competitive bid process. If the total of all kWh under contract under this Rider equals or exceeds the RECs procured by the Company, the Company will endeavor to procure additional RECs at a cost that is equal to or less than the price established in this Rider.

Conditions of Service

Customers who wish to support the development of electricity generated by Green Resources may contract to purchase each month a specific number of fixed kWh blocks, where each block equals 100 kWh. Customers may elect to purchase a minimum of two (2) blocks per month and a maximum of 50 blocks per month.

Green Resources shall be defined as Wind, Solar Photovoltaic, Biomass Co-Firing of Agricultural crops and all energy crops, Hydro (as certified by the Low Impact Hydro Institute), Incremental Improvements in Large Scale Hydro, Coal Mine Methane, Landfill Gas, Biogas Digesters, Biomass Co-Firing of All Woody Waste including mill residue, but excluding painted or treated lumber. Only Green Resources located in the region covered by ReliabilityFirst Corporation and brought into service on or after January 1, 1997 shall qualify.

Monthly Rate

In addition to the monthly charges determined according to the Company's rate schedule under which the customer takes service, the customer shall also pay the following rate for each fixed kWh block under contract regardless of the customer's actual energy consumption.

Charge (\$ per block):                      \$ 0.70

Term of Contract

This Rider shall be in effect through December 31, 2008. Should all kWh taken under this Rider exceed the RECs procured by the Company and the Company is unable to procure additional RECs at a price equal to or less than the price in this Rider, this Rider will continue until all REC kWh are utilized at which time this Rider will be withdrawn.

Special Terms and Conditions

This Rider is subject to the Company's Standard Terms and Conditions of Service and all provisions of the rate schedule under which the customer takes service, including all payment provisions. The Company may deny or terminate service under this Rider to customers who are delinquent in payment to the Company.

Filed pursuant to Order dated May 2, 2007 in Case No. 06-1153-EL-UNC

Issued: August 27, 2007

Effective: Cycle 1 September 2007

Issued by  
Kevin E. Walker, President  
AEP Ohio

COLUMBUS SOUTHERN POWER COMPANY

Original Sheet No. 79-1D

P.U.C.O. NO. 6

OAD - GREEN PRICING OPTION RIDER  
(Open Access Distribution - Green Pricing Option Rider)

Availability of Service

Available to customers taking service under the Company's metered rate schedules. This Rider is not available to Percentage of Income Payment Plan customers.

Participation in this program is subject to the Company's ability to procure renewable energy certificates (RECs) from Green Resources through a competitive bid process. If the total of all kWh under contract under this Rider equals or exceeds the RECs procured by the Company, the Company will endeavor to procure additional RECs at a cost that is equal to or less than the price established in this Rider.

Conditions of Service

Customers who wish to support the development of electricity generated by Green Resources may contract to purchase each month a specific number of fixed kWh blocks, where each block equals 100 kWh. Customers may elect to purchase a minimum of two (2) blocks per month and a maximum of 50 blocks per month.

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Term of Contract

This Rider shall be in effect through December 31, 2008. Should all kWh taken under this Rider exceed the RECs procured by the Company and the Company is unable to procure additional RECs at a price equal to or less than the price in this Rider, this Rider will continue until all REC kWh are utilized at which time this Rider will be withdrawn.

Special Terms and Conditions

This Rider is subject to the Company's Standard Terms and Conditions of Service and all provisions of the rate schedule under which the customer takes service, including all payment provisions. The Company may deny or terminate service under this Rider to customers who are delinquent in payment to the Company.

Filed pursuant to Order dated May 2, 2007 in Case No. 06-1153-EL-UNC

Issued: August 27, 2007

Effective: Cycle 1 September 2007

Issued by  
Kevin E. Walker, President  
AEP Ohio

OHIO POWER COMPANY  
GREEN PRICING OPTION RIDER

Filed pursuant to Order in Case No. 06-1153-EL-UNC



OHIO POWER COMPANY

Original Sheet No. 79-1

P.U.C.O. NO. 18

GREEN PRICING OPTION RIDER

Availability of Service

Available to customers taking service under the Company's metered rate schedules. This Rider is not available to Percentage of Income Payment Plan customers.

Participation in this program is subject to the Company's ability to procure renewable energy certificates (RECs) from Green Resources through a competitive bid process. If the total of all kWh under contract under this Rider equals or exceeds the RECs procured by the Company, the Company will endeavor to procure additional RECs at a cost that is equal to or less than the price established in this Rider.

Conditions of Service

Customers who wish to support the development of electricity generated by Green Resources may contract to purchase each month a specific number of fixed kWh blocks, where each block equals 100 kWh. Customers may elect to purchase a minimum of two (2) blocks per month and a maximum of 50 blocks per month.

Green Resources shall be defined as Wind, Solar Photovoltaic, Biomass Co-Firing of Agricultural crops and all energy crops, Hydro (as certified by the Low Impact Hydro Institute), Incremental Improvements in Large Scale Hydro, Coal Mine Methane, Landfill Gas, Biogas Digesters, Biomass Co-Firing of All Woody Waste including mill residue, but excluding painted or treated lumber. Only Green Resources located in the region covered by ReliabilityFirst Corporation and brought into service on or after January 1, 1997 shall qualify.

Monthly Rate

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Charge (\$ per block):                      \$ 0.70

Term of Contract

This Rider shall be in effect through December 31, 2008. Should all kWh taken under this Rider exceed the RECs procured by the Company and the Company is unable to procure additional RECs at a price equal to or less than the price in this Rider, this Rider will continue until all REC kWh are utilized at which time this Rider will be withdrawn.

Special Terms and Conditions

This Rider is subject to the Company's Standard Terms and Conditions of Service and all provisions of the rate schedule under which the customer takes service, including all payment provisions. The Company may deny or terminate service under this Rider to customers who are delinquent in payment to the Company.

Filed pursuant to Order dated May 2, 2007 in Case No. 06-1153-EL-UNC

Issued: August 27, 2007

Effective: Cycle 1 September 2007

Issued by  
Kevin E. Walker, President  
AEP Ohio

OHIO POWER COMPANY

Original Sheet No. 79-1D

P.U.C.O. NO. 18

OAD - GREEN PRICING OPTION RIDER  
(Open Access Distribution – Green Pricing Option Rider)

Availability of Service

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Participation in this program is subject to the Company's ability to procure renewable energy certificates (RECs) from Green Resources through a competitive bid process. If the total of all kWh under contract under this Rider equals or exceeds the RECs procured by the Company, the Company will endeavor to procure additional RECs at a cost that is equal to or less than the price established in this Rider.

Conditions of Service

Customers who wish to support the development of electricity generated by Green Resources may contract to purchase each month a specific number of fixed kWh blocks, where each block equals 100 kWh. Customers may elect to purchase a minimum of two (2) blocks per month and a maximum of 50 blocks per month.

Green Resources shall be defined as Wind, Solar Photovoltaic, Biomass Co-Firing of Agricultural crops and all energy crops, Hydro (as certified by the Low Impact Hydro Institute), Incremental Improvements in Large Scale Hydro, Coal Mine Methane, Landfill Gas, Biogas Digesters, Biomass Co-Firing of All Woody Waste including mill residue, but excluding painted or treated lumber. Only Green Resources located in the region covered by ReliabilityFirst Corporation and brought into service on or after January 1, 1997 shall qualify.

Monthly Rate

In addition to the monthly charges determined according to the Company's rate schedule under which the customer takes service, the customer shall also pay the following rate for each fixed kWh block under contract regardless of the customer's actual energy consumption.

Charge (\$ per block):                      \$ 0.70

Term of Contract

This Rider shall be in effect through December 31, 2008. Should all kWh taken under this Rider exceed the RECs procured by the Company and the Company is unable to procure additional RECs at a price equal to or less than the price in this Rider, this Rider will continue until all REC kWh are utilized at which time this Rider will be withdrawn.

Special Terms and Conditions

This Rider is subject to the Company's Standard Terms and Conditions of Service and all provisions of the rate schedule under which the customer takes service, including all payment provisions. The Company may deny or terminate service under this Rider to customers who are delinquent in payment to the Company.

Filed pursuant to Order dated May 2, 2007 in Case No. 06-1153-EL-UNC

Issued: August 27, 2007

Effective: Cycle 1 September 2007

Issued by  
Kevin E. Walker, President  
AEP Ohio

FILE

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BEFORE  
THE PUBLIC UTILITIES COMMISSION OF OHIO MAR 22 2007

ATTORNEY GENERAL'S OFFICE  
PUBLIC UTILITIES SECTION

In the Matter of the Application of )  
Columbus Southern Power Company )  
and Ohio Power Company for Approval )  
of Their Plan to Provide an Additional )  
Option for Customer Participation in the )  
Electric Market. )

Case No. 06-1153-EL-UNC

PUCO

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STIPULATION AND RECOMMENDATION

Rule 4901-1-30, Ohio Administrative Code ("OAC") provides that any two or more parties to a proceeding may enter into a written or oral stipulation covering the issues presented in such a proceeding. The purpose of this document is to set forth the understanding of the parties who have signed below (the "Signatory Parties") and to recommend that the Public Utilities Commission of Ohio (the "Commission") approve and adopt, as part of its Opinion and Order in this proceeding, this Stipulation and Recommendation (the "Stipulation") resolving the issues in the above-captioned proceeding. This Stipulation is fully supported by data and information contained in the record in this proceeding; represents a just and reasonable resolution of such issues in this proceeding; violates no regulatory principle or precedent; benefits, as a package, ratepayers and the public interest; and is the product of lengthy, serious bargaining among knowledgeable and capable parties in a cooperative process undertaken by the Signatory Parties to settle this case. While this Stipulation is not binding on the Commission, it is entitled to careful consideration by the Commission, where, as here, it is sponsored by parties representing a wide range of interests, including the Commission's Staff. For the purpose of resolving all issues raised by this proceeding, the Signatory Parties stipulate, agree and recommend as set forth below.

This is to certify that the images appearing are an accurate and complete reproduction of a case file document delivered in the regular course of business  
Technician \_\_\_\_\_ Date Processed 3/23/07

This Stipulation is entered into by and among Columbus Southern Power Company (CSP) and Ohio Power Company (OPCO) (collectively, "AEP Ohio"), both of which are electric utility operating companies of the American Electric Power ("AEP") system, Ohio Energy Group ("OEG") the Commission's Staff ("Staff"), Ohio Consumers' Counsel ("OCC") and Ohio Partners for Affordable Energy ("OPAE"). *All Signatory Parties fully support this Stipulation and urge the Commission to accept and approve the terms hereof.*

WHEREAS, On January 26, 2005, the Commission issued an Opinion and Order in Case No. 04-169-EL-UNC, which, with certain modifications, approved a Rate Stabilization Plan (RSP), filed by AEP Ohio;

WHEREAS, On March 23, 2005, the Commission denied all applications for rehearing which had been filed regarding the January 26, 2005 Opinion and Order;

WHEREAS, OCC pursued an appeal to the Supreme Court of Ohio (Case No. 2005-0767) of the Commission's January 26, 2005, Opinion and Order and March 23, 2005 Entry on Rehearing;

WHEREAS, on July 5, 2006, citing its decision in Ohio Consumers' Counsel v. Pub. Util. Comm., 109 Ohio St.3d 328 2006-Ohio-2110 (the FirstEnergy RSP decision), the Supreme Court of Ohio issued its opinion in OCC's appeal (Ohio Consumers' Counsel v. Pub. Util. Comm., 109 Ohio St.3d 511, 2006-Ohio-3054), vacating the Commission's decision and remanding the cause for further proceedings not inconsistent with the FirstEnergy RSP decision;

WHEREAS, on August 9, 2006 the Commission issued an Entry in Case No. 04-169-EL-UNC which:

1. found that AEP Ohio's RSP remained effective and
2. directed AEP Ohio to file, in a new docket, within 45 days of the Entry, its plan for complying with §4928.14, Ohio Rev. Code;

WHEREAS, on September 22, 2006, AEP Ohio filed in Case No. 06-1153-EL-UNC a  
Plan to Provide Additional Options for Customer Participation in the Electric Market;

WHEREAS, motions to intervene in Case No. 06-1153-EL-UNC have been filed by  
OEG, IEU, OCC, OPAAE and Constellation;

WHEREAS, comments and reply comments concerning AEP Ohio's September 22, 2006  
filing were filed with the Commission on January 12, 2007 and January 22 and 23, 2007,  
respectively;

NOW, THEREFORE, the Signatory Parties stipulate, agree and recommend that the  
Commission make the following findings and issue its Opinion and Order in these proceedings in  
accordance with the following:

1. The motions to intervene filed by OEG, Industrial Energy Users-Ohio, OCC, OPAAE and Constellation NewEnergy, Inc. and Constellation Energy Commodities Group, Inc. shall be granted.
2. The following terms of the AEP Ohio Green Pricing Competitive Bid Tariff Option, as well as the proposed tariff attached to this Stipulation and Recommendation, shall be adopted as fulfilling the requirements of the Commission's August 9, 2006 Entry, as well as the Supreme Court of Ohio's July 5, 2006 opinion referred to above.

## **AEP Ohio Green Pricing Competitive Bid Tariff Option**

### **Eligibility**

All of AEP Ohio's metered customers, excluding Percentage of Income Payment Plan customers, will be eligible to participate in the Green Pricing Competitive Bid Tariff Option ("Green Pricing Option"). Participating customers will be offered an opportunity to promote the development of renewable energy sources through the purchase by AEP Ohio of Renewable Energy Certificates ("RECs") at prices determined through a competitive bid ("Green Product"). The Green Pricing Option is a voluntary, market-based alternative tariff offered to customers by AEP Ohio.

### **Overview of the Green Pricing Option**

AEP Ohio will offer a competitively bid green pricing program as follows:

1. AEP Ohio will competitively bid out a fixed amount of REC MWhrs through a nationally offered request for proposal ("RFP") process.<sup>1</sup>
2. The fixed amount of REC MWhrs to be bid out will be determined by assuming that 1 percent of AEP Ohio's customers would purchase two 100 kWh blocks of the Green Product. This would equal approximately 50,500 MWhrs over 18 months.<sup>2</sup> The RFP will request that the supplier provide AEP Ohio with the ability to purchase additional RECs from the supplier at the offer price. Such ability will be for amounts up to at least 25% of their offer amount.
3. After the selection of the winning bid (or bids), AEP Ohio will file a tariff rider with the PUCO that offers the Green Pricing Option to customers. Customers will be informed regarding the availability of the Green Pricing Option via bill inserts, AEP Ohio's website, press releases, and existing public outreach. AEP Ohio will work with all parties to provide a consistent message to customers about the Green Pricing Option.
4. Customers may elect to purchase a minimum of two blocks per month (100 kWh per block) and a maximum of 50 blocks per month of the Green Product.
5. If all of the REC MWhrs purchased through the bids are not subscribed to by AEP Ohio's customers, AEP Ohio may sell any excess REC MWhrs in the

---

<sup>1</sup> See Green Power definition contained herein.

<sup>2</sup> The estimate is arrived at by assuming 1 percent of AEP Ohio's 1.4 million customers multiplied by 200 kWh, multiplied by 18 months.

REC market on or after July 1, 2008 if it is evident that all REC MWhrs will not be subscribed. AEP will confer with the signatories prior to the sale of these excess RECs.

6. If the Green Pricing Option is oversubscribed, AEP Ohio will endeavor to procure additional RECs at a cost that is equal to or less than the price established in the tariff rider. AEP will first exercise its option with current suppliers to increase the amount of REC's purchased up to 25%. If AEP Ohio is unsuccessful in procuring such additional RECs, the Green Pricing Option will continue until all REC MWhrs are utilized at which time the tariff rider will be withdrawn.
7. The Commission, through its Staff, will oversee the bid process.

### **Term**

If AEP Ohio is unable to procure sufficient RECs to meet customer demand for RECs, the Green Pricing Option may end earlier than December 31, 2008. Prior to ending the Green Pricing Option early AEP shall provide information to the OCC and the PUCO regarding its efforts to procure additional RECs. Except for unforeseen circumstances, implementation of the Green Pricing Option as described herein will be completed within four (4) months following the Commission's approval of this settlement proposal and shall terminate December 31, 2008.

### **Request for Proposals (RFP)**

Bids for RECs will be sought through an RFP process. The tariff rider price will be set to recover the weighted average cost of the winning bid(s) and AEP Ohio's program administration costs.<sup>3</sup>

The purchase cost of the initial REC MWhrs, the cost of any additional REC MWhrs purchased for the Green Pricing Option, and AEP Ohio's program administration costs will be established as an AEP Ohio regulatory asset for recovery on a per customer basis in its next distribution base rate proceeding. AEP Ohio's program administration costs shall not exceed \$125,000. The regulatory asset will be reduced by all amounts collected under the tariff rider and any proceeds resulting from the sale of any excess REC MWhrs. Should such amounts exceed the amount of the regulatory asset, AEP Ohio will establish a regulatory liability to be returned on a per customer basis in its next distribution base rate proceeding. Accrual of a carrying charge on the regulatory asset or regulatory liability will not begin until January 1, 2009.

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<sup>3</sup> Based on other green pricing programs, the expectation is that the REC prices plus program administration costs will not exceed \$5.00 per customer per month for the 200 kWh. For example, the proposed Duke Energy of Ohio green pricing program would offer 200 kWh for \$5.00 per month.

AEP Ohio will purchase REC MWhrs from renewable, environmentally friendly sources as described in the green power definition contained herein.

The Green Pricing Option bids submitted must state the maximum supply in whole MWhrs that the bidder will provide for a given price. REC suppliers submitting Green Pricing Option bids must provide adequate documentation and certification of the green energy per the green power definition contained herein.

REC suppliers must meet AEP Ohio's commercially reasonable creditworthiness standards.

If there are multiple winning bids having the same price, then each winning bidder will be awarded a prorated share of the REC MWhrs needed based upon the maximum REC MWhrs each bidder offered to supply.

### **Customer Enrollment**

Once the bids have been received and analyzed by the Company, and reviewed by the Staff, the Company will file a tariff rider with the Commission and notify customers of the Green Pricing Option via bill inserts, AEP Ohio's website, press releases, and existing public outreach. The Green Pricing Option will be offered to customers at a specific price determined by the competitive bid process as described herein. Customers may enroll in the Green Pricing Option through AEP Ohio's website or by contacting AEP Ohio's Customer Solutions Center.

Customers may elect to purchase the Green Product pursuant to the tariff rider at any time after it is offered and for the life of the tariff rider.

Participating customers will be billed all of the same standard service rates and riders that are applicable to non-participants. Additionally, participating customers will be billed at the Green Pricing Option's tariff rider price for each block of the Green Product purchased.

### **Green Power Definition**

Green power service must come from renewable energy certificates from green resources located inside or outside of the State of Ohio. Green resources shall be defined as Wind, Solar Photovoltaic, Biomass Co-Firing of Agricultural crops and all energy crops, Hydro (as certified by the Low Impact Hydro Institute), Incremental Improvements in Large Scale Hydro, Coal Mine Methane, Landfill Gas, Biogas Digesters, Biomass Co-Firing of All Woody Waste including mill residue, but excluding painted or treated lumber. Only green resources that have been brought into service on or after January 1, 1997 shall qualify. Renewable energy certificates must be sourced from green resources located in the region covered by the ReliabilityFirst Corporation.



Nothing in this Stipulation shall be used or construed for any purpose to imply, suggest or otherwise indicate that the results produced through the compromise reflected herein represent fully the objectives of any Signatory Party.

No Signatory Party will challenge or directly or indirectly support any challenge to the reasonableness or lawfulness of the provisions of this Stipulation.

This Stipulation is submitted for purposes of this proceeding only, and is not deemed binding in any other proceeding, except as expressly provided herein, nor is it to be offered or relied upon in any other proceedings, except as necessary to enforce the terms of this Stipulation. In fact, none of the Signatory parties have submitted the entirety of the case they would have otherwise filed or will file if this Stipulation is rejected.

The agreement of the Signatory Parties reflected in this document is expressly conditioned upon its acceptance in its entirety and without alteration by the Commission.

The Signatory Parties agree that:

- A. if the Commission rejects all or any part of this Stipulation, or otherwise materially modifies its terms, any adversely affected Signatory Party shall have the right, within thirty (30) days of the Commission's order, either to file an application for rehearing or to terminate and withdraw from the Stipulation by filing a notice with the Commission;
- B. if an application for rehearing is filed, and if the Commission does not, on rehearing, accept the Stipulation without material modification, any Signatory Party may terminate and withdraw from the Stipulation by filing a notice with the Commission within ten (10) business days of the Commission's order or entry on rehearing; and

- C. if any portion of this Stipulation is found by a reviewing Court to be unlawful, or if any law is enacted which prohibits the continued application of any term of this Stipulation, any Signatory Party adversely affected by any such judicial decision or statutory enactment may withdraw its support for this Stipulation by filing a notice to that effect with the Commission within thirty (30) days of such judicial decision becoming final or such law becoming effective.

If a Signatory Party pursues any action provided for in parts A, B or C above, a hearing shall go forward, and the parties shall be afforded the opportunity to present evidence through witnesses, to cross-examine all witnesses, to present rebuttal testimony, and to file briefs on all issues and pursue all remedies available in a court of competent jurisdiction.

The Signatory Parties agree and intend to support the reasonableness and legality of this Stipulation before the Commission, and in any appeal from the Commission's adoption and/or enforcement of this Stipulation.

COLUMBUS SOUTHERN POWER COMPANY

P.U.C.O. NO. 18

GREEN PRICING OPTION RIDER

Availability of Service

Available to customers taking service under the Company's metered rate schedules. This Rider is not available to Percentage of Income Payment Plan customers.

Participation in this program is subject to the Company's ability to procure renewable energy certificates (RECs) from Green Resources through a competitive bid process. If the total of all kWh under contract under this Rider equals or exceeds the RECs procured by the Company, the Company will endeavor to procure additional RECs at a cost that is equal to or less than the price established in this Rider.

Conditions of Service

Customers who wish to support the development of electricity generated by Green Resources may contract to purchase each month a specific number of fixed kWh blocks, where each block equals 100 kWh. Customers may elect to purchase a minimum of two (2) blocks per month and a maximum of 50 blocks per month.

Green Resources shall be defined as Wind, Solar Photovoltaic, Biomass Co-Firing of Agricultural crops and all energy crops, Hydro (as certified by the Low Impact Hydro Institute), Incremental Improvements in Large Scale Hydro, Coal Mine Methane, Landfill Gas, Biogas Digesters, Biomass Co-Firing of All Woody Waste including mill residue, but excluding painted or treated lumber. Only Green Resources located in the region covered by ReliabilityFirst Corporation and brought into service on or after January 1, 1997 shall qualify.

Monthly Rate

In addition to the monthly charges determined according to the Company's rate schedule under which the customer takes service, the customer shall also pay the following rate for each fixed kWh block under contract regardless of the customer's actual energy consumption.

Charge (\$ per block):                      \$ X.XX

Term of Contract

This Rider shall be in effect through December 31, 2008. Should all kWh blocks taken under this Rider exceed the RECs procured by the Company and the Company is unable to procure additional RECs at a price equal to or less than the price in this Rider, this Rider will continue until all REC kWh are utilized at which time this Rider will be withdrawn.

Special Terms and Conditions

This Rider is subject to the Company's Standard Terms and Conditions of Service and all provisions of the rate schedule under which the customer takes service, including all payment provisions. The Company may deny or terminate service under this Rider to customers who are delinquent in payment to the Company.

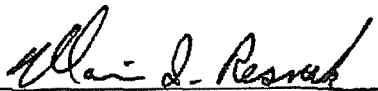
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Issued: \_\_\_\_\_, 2007


Effective: Cycle 1 \_\_\_\_\_ 2007

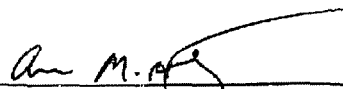
Issued by  
Kevin E. Walker, President  
AEP Ohio

IN WITNESS WHEREOF, this Stipulation and Recommendation has been agreed to as  
of this 22<sup>nd</sup> day of March 2007. The undersigned parties respectfully request the Commission  
to issue an Opinion and Order approving and adopting this Stipulation.

  
\_\_\_\_\_  
Ohio Power Company  
Columbus Southern Power Company

  
\_\_\_\_\_  
Staff of the Public Utilities Commission of Ohio

  
\_\_\_\_\_  
Ohio Energy Group

  
\_\_\_\_\_  
Ohio Consumers Counsel

  
\_\_\_\_\_  
Ohio Partners for Affordable Energy



**APPALACHIAN  
POWER**

A unit of American Electric Power

Appalachian Power  
P O Box 1986  
Charleston, WV 25327  
APCOcustomer.com

April 4, 2008

BY HAND

Ms. Sandra Squire  
Executive Secretary  
Public Service Commission of WV  
201 Brooks Street  
Charleston, WV 25323

08-0493-ET

Charles Bayless  
Attorney  
304/348-4132 (P)  
304/348-4150 (F)  
cebayless@aep.com

Re: Petition for Permission to File Green Pricing Option  
Rider Provision to P.S.C. W.VA. Tariff No. 12 and 17

Dear Ms Squire:

I file herewith on behalf of Appalachian Power ("the Company") an original and twelve (12) copies of:

1. The Company's Petition for Permission to File and Make Effective a Green Pricing Option Rider.
2. The Original Sheet No. 29 P.S.C. W.VA. Tariff No. 12 and 17.

The purpose of this filing is to institute a Green Pricing Option Rider.

If any clarifications or additional materials are deemed necessary in connection with this filing, please do not hesitate to contact the undersigned at any time.

Sincerely,

Charles E. Bayless  
Counsel for Appalachian Power

CEB: dp

Enclosures

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COMMISSION  
SECRETARY'S OFFICE

**PUBLIC SERVICE COMMISSION  
OF WEST VIRGINIA  
CHARLESTON**

CASE NO. 08-0493-ET

**APPALACHIAN POWER COMPANY, and  
WHEELING POWER COMPANY,  
a public utility,**

**Petition for Permission to File  
Green Pricing Option Rider  
Provision to P.S.C. W.VA. Tariff No. 12 and 17**

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COMMISSION  
SECRETARY'S OFFICE

**PETITION AND FILING**

Appalachian Power Company ("APCo") and Wheeling Power Company ("WPCo") (collectively "the Companies") respectfully petition the Public Service Commission of West Virginia that they be permitted, under W. Va. Code, § 24-2-4a and the Commission's Rules and Regulations, to place into effect, on September 1, 2008, the attached Original Sheet No. 29 of its P.S.C. W. Va. Tariff No. 12 and P.S.C. W. Va. Tariff No. 17, constituting a rate schedule denominated "Green Pricing Option Rider." In support of this Petition and Filing, the Companies states as follows:

1. APCo is a Virginia Corporation duly authorized to engage in the business of providing electric service to retail customers in the States of West Virginia and Virginia. WPCo is a West Virginia Corporation duly authorized to engage in the business of providing electric service to retail customers in the State of West Virginia. Both APCo and WPCo have a principle business address of 707 Virginia Street, East, Charleston, West Virginia, 25301. APCo and WPCo are both wholly owned subsidiaries of American Electric Power Company, Inc. ("AEP").

2. The Companies' West Virginia retail operations are subject to regulation as a public utility by the Commission under Chapter 24 of the West Virginia Code.

3. In 2007 APCo issued a Request for Proposals ("RFP") for up to 260 Megawatts ("MW") of renewable wind energy and associated capacity and environmental attributes. As a result of the 2007 RFP, APCo entered into contracts to purchase 75 MW of energy and associate capacity and environmental attributes from the Camp Grove Wind Farm located in Illinois, and 100 MW from the Fowler Ridge Wind Farm located in Indiana. APCo began receiving wind energy from Camp Grove in

January 2008 and expects to receive energy from Fowler Ridge in late 2008. In addition to wind energy, APCo currently purchases renewable hydroelectric power and energy from the Summersville Hydro in West Virginia.

4. On April 1, 2008, APCo issued a RFP for approximately 100 MW of energy and associated capacity and environmental attributes from renewable resources capable of being on-line by December 31, 2010. Renewable resources eligible for consideration include wind, solar photovoltaic, biomass firing or co-firing of agricultural crops and energy crops, low impact hydro, coal mine methane, landfill gas, biogas digesters and biomass firing or co-firing of certain crop residues, animal waste and woody waste.

5. Currently, APCo's supplies approximately 2% of APCo's and WPCo's customers total energy requirement with renewable energy resources.

6. The Companies are proposing a Green Pricing Option Rider to be offered to customers who wish to support the development of electricity generated by Renewable Resources. The Green Pricing Option Rider will be available, effective September 1, 2008, as an additional option, to retail electric service customers taking service under the Companies metered rate schedules. This Rider will not be available to residential customers served under the S.R.R.-R.S. Amendment of Schedule R.S.

7. The Green Pricing Option Rider will allow individual customers to purchase 100 kWh blocks of Green Power each month. For service under Schedules R.S., R.S.-T.O.D., or S.G.S., customers may elect to purchase a minimum of 2 blocks per month and a maximum of 50 blocks per month. For service under Schedules S.S., S.W.S., M.G.S., G.S-T.O.D., and L.G.S., customers may elect to purchase a minimum of 5 blocks per month and a maximum of 120 blocks per month. For service under Schedules L.C.P. and I.P., customers may elect to purchase a minimum of 20 blocks per month and a maximum of 500 blocks per month.

8. Renewable Resources shall be defined as Wind, Solar Photovoltaic, Biomass Co-Firing of Agricultural crops and all energy crops, Hydro (as certified by the Low Impact Hydro Institute), Incremental Improvements in Large Scale Hydro, Coal Mine Methane, Landfill Gas, Biogas Digesters, and Biomass Co-Firing of All Woody Waste including mill residue.

9. In addition to the monthly charges determined according to the Companies rate schedules under which the customer takes service, the customer shall also pay the following rate for each fixed 100 kWh block under contract regardless of the customer's actual energy consumption. The monthly charge (\$ per 100 kWh block) will be \$1.50.

10. Customer participation under this Rider may be limited by the availability of Renewable Energy Certificates ("RECs") from Renewable Resources. If the annual total of all kWh subscribed to by Companies' customers equals or exceeds the equivalent of 10% of APCo's West Virginia jurisdictional share of projected RECs to be procured

USA  
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on an annual basis by APCo, the Companies may suspend the availability of this Rider to new participants.

11. The Companies request that the requirements regarding public notice set forth in Rule 23 be waived as inconsistent with the need to implement Green Pricing Option Rider since this Rider provides a purely voluntary form of service and since the Companies will commit to provide actual notice of Green Pricing Option Rider to all of its customers who are eligible for service thereunder. The Companies also request waiver of any requirement to submit Rule 42 data, since such data is not useful to the Commission's review of Green Pricing Option Rider.

12. The Green Pricing Option Rider proposed by the Companies is in the public interest and would promote the wise and efficient use of renewable energy resources by the Companies customers.

13. The Green Pricing Option Rider is a fair, reasonable and prudent method for providing the customer an opportunity to support the development of electricity generated by Renewable Resources.

WHEREFORE, the Companies respectfully request that the Commission grant the Companies permission to put the Green Pricing Option Rider into effect for service rendered on and after September 1, 2008.

Respectfully submitted,

**APPALACHIAN POWER COMPANY  
WHEELING POWER COMPANY**



Charles E. Bayless (WV State Bar I.D. No. 10023)  
P.O. Box 1986  
Charleston, West Virginia 25327  
Counsel for Appalachian Power Company

Dated this 4th day of April, 2008.

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**APPALACHIAN POWER COMPANY  
WHEELING POWER COMPANY**  
(See Sheet Nos. 2-1 through 2-7 for Applicability)

**P.S.C. W.VA. TARIFF NO. 12 (APPALACHIAN POWER COMPANY)  
P.S.C. W.VA. TARIFF NO 17 (WHEELING POWER COMPANY)**

**GREEN PRICING OPTION RIDER**

Availability of Service

Available to customers taking service under the Company's metered rate schedules. This Rider is not available to residential customers served under the S.R.R.-R.S Amendment of Schedule R.S. which provides special reduced rates under the provisions of West Virginia Code §24-2A.

Participation in this program may be limited by the availability to the Company of Renewable Energy Certificates (RECs) from renewable resources. If the annual total of all kWh under contract under this Rider equals or exceeds the equivalent of 10% of Appalachian Power Company's West Virginia retail jurisdictional share of projected RECs to be procured on an annual basis by Appalachian Power Company, the Company may suspend the availability of this Rider to new participants.

Conditions of Service

Customers who wish to support the development of electricity generated by Renewable Resources may contract to purchase each month a specific number of fixed blocks of 100 kWh. For service under Schedules R.S., R.S.-T.O.D., or S.G.S., customers may elect to purchase a minimum of 2 blocks per month and a maximum of 50 blocks per month. For service under Schedules S.S., S.W.S., M.G.S., G.S.-T.O.D., and L.G.S, customers may elect to purchase a minimum of 5 blocks per month and a maximum of 120 blocks per month. For service under Schedules L.C.P and I.P., customers may elect to purchase a minimum of 20 blocks per month and a maximum of 500 blocks per month.

Renewable resources shall be defined as Wind, Solar Photovoltaic, Biomass Co-Firing of Agricultural crops and all energy crops, Hydro (as certified by the Low Impact Hydro Institute), Incremental Improvements in Large Scale Hydro, Coal Mine Methane, Landfill Gas, Biogas Digesters, and Biomass Co-Firing of All Woody Waste including mill residue.

Monthly Rate

In addition to the monthly charges determined according to the Company's rate schedule under which the customer takes service, the customer shall also pay the following rate for each fixed 100 kWh block under contract regardless of the customer's actual energy consumption.

Monthly Charge (\$ per 100 kWh block):                      \$ 1.50

Term

Service under this Rider shall remain in effect until either the Company or the Customer gives notice of its intent to cancel. Cancellation of the Rider shall be deemed effective at the end of the current billing period when the notice is provided.

Special Terms and Conditions

This Rider is subject to the Company's Standard Terms and Conditions of Service and of the provisions under the rate schedule the customer is taking service. The Company may deny or terminate service under this Rider to customers who are delinquent in payment to the Company.

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(C) Indicates Change, (D) Indicates Decrease, (I) Indicates Increase, (N) Indicates New, (O) Indicates Omission, (T) Indicates Temporary

Issued Pursuant to  
P.S.C. West Virginia  
Case No. \_\_\_\_\_  
Order Dated \_\_\_\_\_, 2008

Issued By  
D.E. Waldo, President & COO  
Charleston, West Virginia

Effective: Service rendered on or after  
\_\_\_\_\_, 2008



**Kentucky Power Company**

**REQUEST**

KPCo stated that it is a possibility that KPCo will purchase RECs from a recognized green energy marketer or brokerage firm. Please explain how the brokerage administrative costs would be recovered, along with what a reasonable percentage of the brokerage fee would be in relation to the cost of the RECs.

**RESPONSE**

The brokerage administrative costs are identified separately as a component of the REC purchase price, are included in the total cost of the REC and will be recovered as described in the proposed Green Pricing Option Rider through charges to the customer. The typical brokerage fees are approximately 3.5% of the total cost of each REC transaction.

**WITNESS:** David M Roush



**Kentucky Power Company**

**REQUEST**

If KPCo chooses to purchase from a brokerage firm, is it possible that KPCo would partner with other AEP affiliates to purchase the RECs?

**RESPONSE**

Yes, KPCo will partner with its sister companies whenever it is feasible and prudent to do so.

**WITNESS:** David M Roush



## Kentucky Power Company

### REQUEST

Please provide a list of brokers AEP is currently using or interacts with regularly.

### RESPONSE

Below is a list of brokers that AEP has used to purchase RECs. This list is not meant to be all-inclusive, but rather indicative of the broad range of companies with whom AEP does business.

The following is a list of brokers that AEP interacts with on a regular basis:

Evolution Markets  
Clear Energy Brokerage & Consulting  
Amerex Energy  
ICAP United  
TFS Energy  
Spectron Group  
Tullett Prebon

**WITNESS:** David M Roush





**Kentucky Power Company**

**REQUEST**

For each AEP jurisdictions that have green power programs, please provide both the total number of customers for that particular operating company and the total number of customers participating in the green power programs. Also, please provide any data available from other states as well.

**RESPONSE**

At this time, the only AEP jurisdiction with Green Pricing Option availability is AEP Ohio. The total number of customers at the end of April 2008 are as follows:

Columbus Southern Power	751,325
Ohio Power	<u>712,472</u>
Total	1,463,797

As of April 26, 2008, the total number of participants in the AEP Ohio Green Pricing Option Program was 1,179.

For participation information on a national level, please see the attached 3 documents.

**WITNESS:** David M Roush

# Green Pricing and Net Metering Programs, 2005

**July 2007**

**Energy Information Administration**  
Office of Coal, Nuclear, Electric and Alternate Fuels  
U.S. Department of Energy  
Washington, DC 20585

This report is available on the Web at:  
<http://www.eia.doe.gov/fuelrenewable.html>

This report was prepared by the Energy Information Administration, the independent statistical and analytical agency within the U.S. Department of Energy. The information contained herein should be attributed to the Energy Information Administration and should not be construed as advocating or reflecting any policy of the Department of Energy or any other organization.

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## Preface

The Energy Information Administration (EIA) reports historical data on green pricing and net metering programs in its report, the *Renewable Energy Annual*. This report, *Green Pricing and Net Metering Programs, 2005*, provides an overview and tables with historical data for 2002-2005. These tables correspond to similar tables to be presented in *Renewable Energy Annual 2005* and are numbered accordingly.

Data in this report is based upon electric industry participants information reported on Form EIA-861, "Annual Electric Power Industry Report." General information about the survey may be found here: <http://www.eia.doe.gov/oss/forms.html#eia-861>. Definitions for terms used in this report can be found in EIA's Energy Glossary: <http://www.eia.doe.gov/glossary/index.html>.

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## Green Pricing and Net Metering Programs, 2005

### Background

Green pricing/marketing programs allow electricity customers to voluntarily pay the additional costs for renewable energy through direct payments on their monthly bills. In return, the electricity provider guarantees that it will provide either directly or by contract that amount of renewable-based electricity.

The Energy Information Administration (EIA) collects information about green pricing programs on the Form EIA-861, "Annual Electric Power Industry Report," which is a survey of electric industry participants.<sup>1</sup> All respondents, except independent power producers and qualifying facilities, were asked to report their number of customers in green pricing programs by state and customer class.

Net metering programs usually permit customers operating very small generators to purchase extra electricity when needed. Also, any excess power at the end of the month can be sold back to the utility. Provisions vary by state and utility and often apply to solar or wind energy. In addition, pricing schemes vary by individual utility and customer circumstance. This system facilitates the ease of operating intermittent generators, such as those using solar and wind energy, and improves their economics. The EIA collects information on net metering on the Form EIA-861 in much the same manner as it does green pricing.

### 2005 In Review

In 2005, the number of electric industry participants reporting customers in green pricing programs increased by 39 to 442 (Table H1). The total number of green pricing customers was nearly 943,000. Residential customers represented 92 percent of the total. Net gains of more than 102,000 customers in 33 states were largely offset by net losses of about 88,000 primarily in four states (Ohio, California, Pennsylvania, and Tennessee) (Table 63).

---

<sup>1</sup> "Electric industry participants" include electric utilities, wholesale power marketers, energy service providers, and electric power producers.

Of particular interest in reviewing these results is the status of one company, Green Mountain Energy, an Austin, Texas based green power marketer, which was a dominant player in the market during 2005. Early in 2006, the company reported that effective December 31, 2005, it had pulled out of the Ohio market, where it had some 450,000 green pricing customers. Also, its customer base in Pennsylvania, where it once had 100,000 customers, began plunging during 2005 due to rising energy prices.<sup>2</sup>

Growth in the number of net metering customers has been rapid. In 2005, 188 electric industry participants reported 21,146 net metering customers, up by 5,320 or 34 percent from the previous year (Table H1). Ninety-one percent were residential customers. Thirty-two states reported net gains of net metering customers (Table 64). California accounted for a net gain of 3,921 customers, followed by New Jersey with 297. This is attributed in part to more aggressive support for renewable energy in these two states, particularly for energy sources like roof-top solar, which is a popular application for net metering.<sup>3</sup>

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<sup>2</sup> Austin American Statesman, "Green's Alternative Power Play: Austin-based company has faced mountain of challenges in quest to bring wind, other renewable energy to forefront," (Austin, Texas, January 22, 2006). See this website:

<http://www.statesman.com/business/content/business/stories/other/01/22greenmountain.html>

<sup>3</sup> For details of individual state net metering programs, including some history, see the North Carolina Solar Center DSIRE database on this website:

<http://www.dsireusa.org/summarytables/regI.cfm?&CurrentPageID=7&EE=1&RE=1>

Table H1. Estimated U.S. Green Pricing Customers by Customer Class, 2002-2005

Year	Electric Industry Participants	Participating Customers		Total
		Customer Class		
		Residential	Non-residential	
2002	212	688,069	23,481	711,550
2003	308	819,579	57,547	877,126
2004	403	864,794	63,539	928,333
2005	442	871,774	70,998	942,772

Note: Non-residential may include some customers for whom no customer class is specified.

Totals may not equal the sum of the components due to independent rounding.

Source: Energy Information Administration, Form EIA-861, "Annual Electric Power Industry Report."

Table H2. Estimated U.S. Net Metering Customers by Customer Class, 2002-2005

Year	Electric Industry Participants	Participating Customers		
		Customer Class		Total
		Residential	Non-residential	
2002	96	3,559	913	4,472
2003	127	5,870	943	6,813
2004	166	14,114	1,712	15,826
2005	188	19,244	1,902	21,146

Note: Non-residential may include some customers for whom no customer class is specified.  
 Totals may not equal the sum of the components due to independent rounding.  
 Source: Energy Information Administration, Form EIA-861, "Annual Electric Power Industry Report."



Table 63. Estimated U.S. Green Pricing Customers by State and Customer Class, 2004 and 2005

State	Electric Industry Participants 2005 <sup>a</sup>	2005			2004
		Residential	Non-Residential	Total	Total
Alabama	2	970	5	975	755
Alaska	1	320	5	325	
Arizona	3	5,783	113	5,896	5,792
Arkansas					
California	9	38,728	1,708	40,436	62,090
Colorado	24	39,387	1,022	40,409	40,166
Connecticut					
Delaware					15
District of Columbia	2	4,743	2,306	7,049	5,222
Florida	4	23,569	30	23,599	11,076
Georgia	16	3,738	57	3,795	3,241
Hawaii	3	4,234	45	4,279	4,005
Idaho	6	3,764	114	3,878	4,283
Illinois	6	1,225	2	1,227	31
Indiana	10	1,400	27	1,427	1,339
Iowa	54	7,896	154	8,050	7,313
Kansas					
Kentucky	10	796	13	809	513
Louisiana					
Maine	2	1,707	312	2,019	8
Maryland	2	28,772	3,955	32,727	15,178
Massachusetts	3	4,543	166	4,709	2,866
Michigan	9	1,867	147	2,014	1,376
Minnesota	93	24,374	314	24,688	23,058
Mississippi	1	3	0	3	81
Missouri	15	443	8	451	398
Montana	6	392	8	400	407
Nebraska	4	3,720	48	3,768	4,071
Nevada	3	384	0	384	498
New Hampshire					
New Jersey	2	1,390	302	1,692	1,911
New Mexico	11	9,400	452	9,852	8,461
New York	7	6,192	385	6,577	1,485
North Carolina	19	7,610	277	7,887	6,266
North Dakota	12	6,835	22	6,857	4,687
Ohio	3	360,398	42,035	402,433	454,509
Oklahoma	7	10,274	480	10,754	9,537
Oregon	11	62,267	1,488	63,755	53,902
Pennsylvania	3	29,718	40	29,758	36,328
Rhode Island	2	3,385	92	3,477	1,505
South Carolina	10	2,188	267	2,455	2,076
South Dakota	7	687	28	715	473
Tennessee					6,523
Texas	7	74,948	12,276	87,224	68,380
Utah	5	16,294	419	16,713	14,067
Vermont	1	2,008	87	2,095	899
Virginia	2	2,989	20	3,009	3,438
Washington	20	30,679	672	31,351	28,109
West Virginia					
Wisconsin	55	38,668	1,033	39,701	29,199
Wyoming	5	3,086	64	3,150	2,796
Total	442	871,774	70,998	942,772	928,333

<sup>a</sup> Includes entities with green pricing programs in more than one state.

Note: Non-residential may include some customers for whom no customer class is specified. Blank cells indicate no data was reported for the state or the number of customers in a class was zero. Totals may not equal the sum of the components due to independent rounding.  
 Source: Energy Information Administration, Form EIA-861, "Annual Electric Power Industry Report."

Table 64. Estimated U.S. Net Metering Customers by State and Customer Class, 2004 and 2005

State	Electric Industry Participants 2005 <sup>a</sup>	2005			2004
		Residential	Non-Residential	Total	Total
Alabama	2	1	12	13	13
Alaska					
Arizona	5	145	7	152	43
Arkansas	2	4	1	5	3
California	18	16,134	1,293	17,427	13,506
Colorado	10	132	13	145	87
Connecticut	2	64	11	75	31
Delaware	1	12	8	20	
District of Columbia					
Florida	5	21	8	29	30
Georgia	1	1	0	1	2
Hawaii	4	90	8	98	46
Idaho	3	18	3	21	19
Illinois	4	1	7	8	2
Indiana	2	8	8	16	16
Iowa	5	10	6	16	8
Kansas	3	7	4	11	10
Kentucky	3	1	2	3	2
Louisiana					
Maine	1	2	6	8	
Maryland	5	8	1	9	9
Massachusetts	4	226	20	246	170
Michigan	2	5	2	7	5
Minnesota	25	177	16	193	233
Mississippi					1
Missouri	3	3	2	5	2
Montana	2	177	76	253	186
Nebraska					
Nevada	2	178	10	188	100
New Hampshire	4	65	28	93	81
New Jersey	2	550	54	604	307
New Mexico	5	9	7	16	11
New York	2	88	42	130	87
North Carolina					1
North Dakota	2	4	0	4	4
Ohio	5	21	10	31	18
Oklahoma	2	3	27	30	31
Oregon	9	301	40	341	232
Pennsylvania	4	106	28	134	89
Rhode Island	2	62	19	81	25
South Carolina					
South Dakota					
Tennessee					7
Texas	7	152	11	163	16
Utah	2	26	4	30	10
Vermont	5	149	15	164	67
Virginia	9	26	2	28	19
Washington	11	73	23	96	73
West Virginia	1	0	1	1	1
Wisconsin	9	176	64	240	212
Wyoming	5	8	3	11	11
Total	188	19,244	1,902	21,146	15,826

<sup>a</sup> Includes entities with net metering programs in more than one state.

Note: Non-residential may include some customers for whom no customer class is specified. Blank cells indicate no data was reported for the state or the number of customers in a class was zero. Totals may not equal the sum of the components due to independent rounding. Source: Energy Information Administration, Form EIA-861, "Annual Electric Power Industry Report."



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## **NREL Highlights Leading Utility Green Power Programs**

### ***Pricing programs give consumers clean power choices***

**Golden, Colo., April 22, 2008** – The U.S. Department of Energy’s (DOE) National Renewable Energy Laboratory (NREL) today released its annual ranking of leading utility green power programs. Under these voluntary programs, consumers can choose to help support additional electricity production from renewable resources such as solar and wind. More than 800 utilities across the United States offer these programs.

Using information provided by utilities, NREL develops “Top 10” rankings of utility programs in the following categories: total sales of renewable energy to program participants, total number of customer participants, customer participation rate, green power sales as a percentage of total utility retail electricity sales, and the lowest price premium charged for a green power program using new renewable resources.

Ranked by renewable energy sales, the green power program of Austin (Texas) Energy is first in the nation, followed by Portland General Electric, PacifiCorp, Florida Power & Light, and Xcel Energy.

Ranked by customer participation rates, the top utilities are City of Palo Alto (Calif.) Utilities, Lenox (Iowa) Municipal Utilities, Silicon Valley Power (Calif.), Portland General Electric, and Sacramento Municipal Utility District. (See attached tables for additional rankings).

“Utility green power programs continue to expand across the country,” said Lori Bird, senior energy analyst at NREL. “These utilities are the national leaders.”

Customer choice programs are proving to be a powerful stimulus for growth in renewable energy supply. In 2007, total utility green power sales exceeded 4.5 billion kilowatt-hours (kWh), about a 20% increase over 2006. Approximately 600,000 customers are participating in utility programs nationwide.

- more -



Utility green pricing programs are one segment of a larger green power marketing industry that counts Fortune 500 companies, government agencies and colleges and universities among its customers, and helps support more than 3,000 MW of new renewable electricity generation capacity.

NREL analysts attribute the success of many programs to persistence in marketing and creative marketing strategies, including in some cases, utility partnerships with independent green power marketers. In addition, the rate premium that customers pay for green power continues to drop.

NREL performs analyses of green power market trends and is funded by DOE's Office of Energy Efficiency and Renewable Energy.

NREL is the U.S. Department of Energy's primary national laboratory for renewable energy and energy efficiency research and development. NREL is operated for DOE by Midwest Research Institute and Battelle.

###

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NR-1108



**Green Pricing Program Renewable Energy Sales**  
 (as of December 2007)

Rank	Utility	Resources Used	Sales (kWh/year)	Sales (aMW) <sup>a</sup>
1	Austin Energy	Wind, landfill gas	577,636,840	65.9
2	Portland General Electric <sup>b</sup>	Geothermal, biomass, wind	553,677,903	63.2
3	PacifiCorp <sup>cde</sup>	Wind, biomass, landfill gas, solar	383,618,885	43.8
4	Florida Power & Light <sup>b</sup>	Biomass, wind, landfill gas, solar	373,596,000	42.6
5	Xcel Energy <sup>ef</sup>	Wind	326,553,866	37.3
6	Sacramento Municipal Utility District <sup>e</sup>	Wind, landfill gas, small hydro, solar	275,481,584	31.4
7	Puget Sound Energy <sup>e</sup>	Wind, solar, biomass, landfill gas	246,406,200	28.1
8	Basin Electric Power Cooperative	Wind	226,474,000	25.9
9	National Grid <sup>gh</sup>	Biomass, wind, small hydro, solar	180,209,571	20.6
10	PECO <sup>i</sup>	Wind	160,000,000	18.3

<sup>a</sup> An "average megawatt" (aMW) is a measure of continuous capacity equivalent (i.e., operating at a 100% capacity factor).

<sup>b</sup> Marketed in partnership with Green Mountain Energy Company. For Portland General Electric, some products marketed in partnership with Green Mountain Energy Company.

<sup>c</sup> Includes Pacific Power and Rocky Mountain Power.

<sup>d</sup> Some Oregon products marketed in partnership with 3Degrees Group, Inc.

<sup>e</sup> Product is *Green-e* certified ([www.green-e.org](http://www.green-e.org)). For Xcel Energy, the Colorado and Minnesota Windsource products are *Green-e* certified.

<sup>f</sup> Includes Northern States Power, Public Service Company of Colorado, and Southwestern Public Service.

<sup>g</sup> Includes Niagara Mohawk, Massachusetts Electric, Narragansett Electric, and Nantucket Electric.

<sup>h</sup> Marketed in partnership with Community Energy, Inc., EnviroGen, Green Mountain Energy Company, Mass Energy, People's Power & Light, and Sterling Planet.

<sup>i</sup> Marketed in partnership with Community Energy, Inc.



**Total Number of Customer Participants**  
 (as of December 2007)

Rank	Utility	Program(s)	Participants
1	Xcel Energy <sup>a</sup>	<i>Windsource<sup>b</sup></i> <i>Renewable Energy Trust</i>	75,534
2	Portland General Electric <sup>c,g</sup>	<i>Clean Wind</i> <i>Green Source</i>	61,543
3	PacifiCorp <sup>d,e</sup>	<i>Blue Sky Block<sup>b</sup></i> <i>Blue Sky Usage<sup>b</sup></i> <i>Blue Sky Habitat</i>	60,539
4	Sacramento Municipal Utility District	<i>Greenergy<sup>b</sup></i>	43,543
5	PECO <sup>f</sup>	<i>PECO WIND</i>	38,548
6	Florida Power & Light <sup>g</sup>	<i>Sunshine Energy</i>	37,184
7	National Grid <sup>h,i</sup>	<i>GreenUp</i>	24,429
8	Los Angeles Department of Water and Power	<i>Green Power for a Green LA</i>	22,788
9	Puget Sound Energy	<i>Green Power Program<sup>b</sup></i>	20,457
10	Energy East (NYSEG/RGE) <sup>f</sup>	<i>Catch the Wind</i>	19,520

<sup>a</sup> Includes Northern States Power, Public Service Company of Colorado, and Southwestern Public Service.

<sup>b</sup> Product is *Green-e* certified ([www.green-e.org](http://www.green-e.org)). For Xcel Energy, the Colorado and Minnesota *Windsource* products are *Green-e* certified.

<sup>c</sup> Some products marketed in partnership with Green Mountain Energy Company.

<sup>d</sup> Includes Pacific Power and Rocky Mountain Power.

<sup>e</sup> Some Oregon products marketed in partnership with 3Degrees Group, Inc.

<sup>f</sup> Marketed in partnership with Community Energy, Inc.

<sup>g</sup> Marketed in partnership with Green Mountain Energy Company.

<sup>h</sup> Includes Niagara Mohawk, Massachusetts Electric, Narragansett Electric, and Nantucket Electric.

<sup>i</sup> Marketed in partnership with Community Energy, EnviroGen, Green Mountain Energy Company, Mass Energy, People's Power & Light, and Sterling Planet.



**Customer Participation Rate**  
 (as of December 2007)

Rank	Utility	Customer Participation Rate	Program(s)	Program Start Year
1	City of Palo Alto Utilities <sup>ab</sup>	20.4%	<i>Palo Alto Green</i>	2003
2	Lenox Municipal Utilities <sup>c</sup>	14.3%	<i>Green City Energy</i>	2003
3	Silicon Valley Power <sup>ab</sup>	8.7%	<i>Santa Clara Green Power</i>	2004
4	Portland General Electric <sup>d</sup>	8.5%	<i>Clean Wind, Green Source, Renewable Future</i>	2002
5	Sacramento Municipal Utility District <sup>b</sup>	7.4%	<i>Greenergy</i>	1997
6	City of Naperville Public Utilities <sup>e</sup>	6.7%	<i>Renewable Energy Program</i>	2005
7	Montezuma Municipal Light & Power <sup>c</sup>	6.2%	<i>Green City Energy</i>	2003
8	Pacific Power (Oregon only) <sup>ab</sup>	5.7%	<i>Blue Sky Usage, Habitat, Block</i>	2002
9	River Falls Municipal Utilities <sup>f</sup>	5.3%	<i>Renewable Energy Program</i>	2001
10	Holy Cross Energy	5.2%	<i>Wind Power Pioneers Local Renewable Energy Pool</i>	1998 2002

<sup>a</sup> Marketed in partnership with 3Degrees Group, Inc.

<sup>b</sup> Product is *Green-e* certified ([www.green-e.org](http://www.green-e.org)).

<sup>c</sup> Program offered in association with the Iowa Association of Municipal Utilities.

<sup>d</sup> Some products marketed in partnership with Green Mountain Energy Company.

<sup>e</sup> Marketed in partnership with Community Energy, Inc.

<sup>f</sup> Power supplied by Wisconsin Public Power Inc.



**Green Power Sales as a Percentage of Total Retail Electricity Sales (in kWh)**  
 (as of December 2007)

Rank	Utility	Program Name	% of Load
1	Edmond Electric <sup>a</sup>	<i>Pure &amp; Simple</i>	5.7%
2	Austin Energy	<i>GreenChoice</i>	5.0%
3	City of Palo Alto Utilities <sup>bd</sup>	<i>PaloAltoGreen</i>	4.6%
4	Portland General Electric <sup>c</sup>	<i>Clean Wind, Green Source, Renewable Future</i>	2.9%
5	Silicon Valley Power, City of Santa Clara <sup>bd</sup>	<i>Santa Clara Green Power</i>	2.8%
6	Sacramento Municipal Utility District <sup>d</sup>	<i>Greenenergy</i>	2.6%
7	Basin Electric Power Cooperative	<i>PrairieWinds</i>	1.9%
7	Pacific Power (Oregon only) <sup>bde</sup>	<i>Blue Sky Usage, Habitat, Block</i>	1.9%
9	Emerald People's Utility District	<i>EPUD Renewables</i>	1.8%
10	Public Service Company of New Mexico	<i>PNM Sky Blue</i>	1.5%
10	Roseville Electric <sup>bd</sup>	<i>Green Roseville</i>	1.5%

- <sup>a</sup> Power supplied by Oklahoma Municipal Power Authority.
- <sup>b</sup> Marketed in partnership with 3Degrees Group, Inc.
- <sup>c</sup> Marketed in partnership with Green Mountain Energy Company.
- <sup>d</sup> Product is *Green-e* certified ([www.green-e.org](http://www.green-e.org)).
- <sup>e</sup> Renewable portfolio options offered to Oregon customers.





**Price Premium Charged for New, Customer-Driven Renewable Power<sup>a</sup>**  
 (as of December 2007)

Rank	Utility	Resources Used	Premium (¢/kWh)
1	Edmond Electric <sup>bc</sup>	Wind	0.09
2	OG&E Electric Services <sup>b</sup>	Wind	0.10
3	Austin Energy <sup>be</sup>	Wind, landfill gas	0.16
4	Indianapolis Power and Light	Wind, landfill gas	0.20
5	Park Electric Cooperative	Wind	0.22
6	Avista Utilities	Wind, landfill gas, biomass	0.33
7	Xcel Energy (Minnesota) <sup>bdf</sup>	Wind	0.58
8	Clallam County Public Utility District <sup>b</sup>	Landfill gas	0.70
9	PacifiCorp <sup>dg</sup>	Wind, biomass, landfill gas, solar	0.78
10	Portland General Electric <sup>h</sup>	Biomass, Geothermal, Wind	0.80
10	Emerald People's Utility District	Wind	0.80

<sup>a</sup> Includes only programs that have installed or announced firm plans to install or purchase power from 100% new renewable resources.

<sup>b</sup> Premium is variable; customers in these programs are exempt or otherwise protected from changes in utility fuel charges.

<sup>c</sup> Power supplied by Oklahoma Municipal Power Authority.

<sup>d</sup> Product is *Green-e* certified ([www.green-e.org](http://www.green-e.org)).

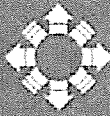
<sup>e</sup> The price for new customers enrolling in the program (fourth batch of renewable energy capacity).

<sup>f</sup> Net premium of the Minnesota *Windsorce* program.

<sup>g</sup> Pacific Power *Blue Sky Usage* product; only available in Oregon. Product marketed in partnership with 3Degrees Group, Inc.

<sup>h</sup> Portland General Electric *Green Source* Product. Product marketed in partnership with Green Mountain Energy Company.



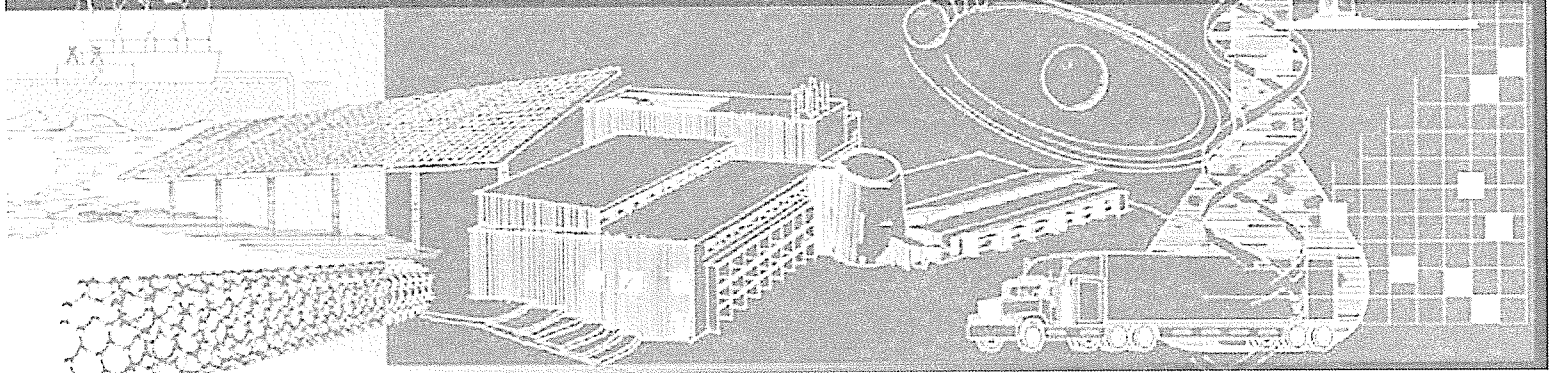


# Trends in Utility Green Pricing Programs (2006)

**Technical Report**  
**NREL/TP-670-42287**  
October 2007

Lori Bird and Marshall Kaiser

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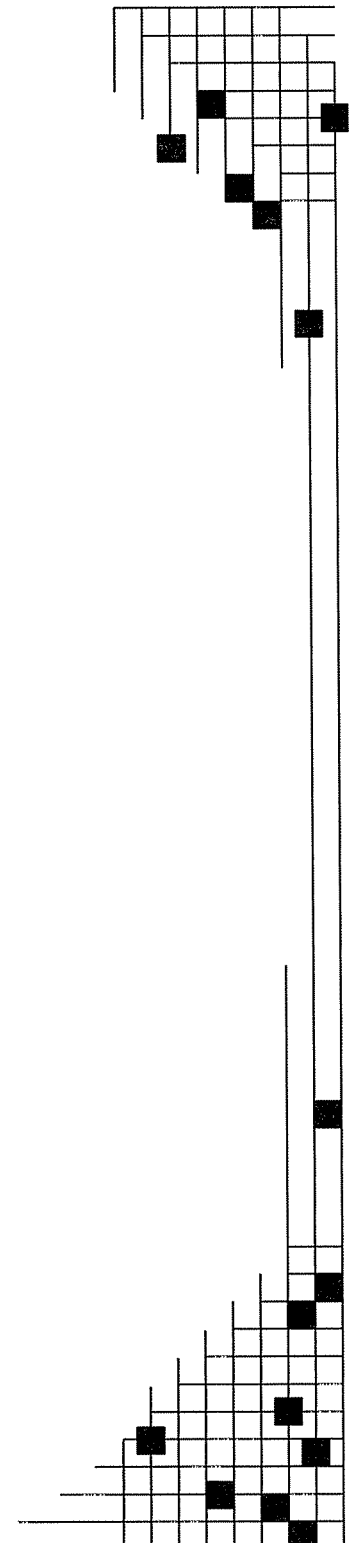


# Trends in Utility Green Pricing Programs (2006)

*Technical Report*  
NREL/TP-670-42287  
October 2007

Lori Bird and Marshall Kaiser

Prepared under Task No. IGST.7330



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## Executive Summary

In the early 1990s, only a handful of utilities offered their customers a choice of purchasing electricity generated from renewable energy sources. Today, more than 750 utilities—or about 25% of all utilities nationally—provide their customers a “green power” option. Because some utilities offer programs in conjunction with cooperative associations or other publicly owned power entities, the number of distinct programs totals more than 150. Through these programs, more than 70 million customers have the ability to purchase renewable energy to meet some portion or all of their electricity needs—or make contributions to support the development of renewable energy resources. Typically, customers pay a premium above standard electricity rates for this service.

This report presents year-end 2006 data on utility green pricing programs, and examines trends in consumer response and program implementation over time. The data in this report, which were obtained via a questionnaire distributed to utility green pricing program managers, can be used by utilities to benchmark the success of their green power programs. It is important to note that this report covers only a portion of voluntary markets for renewable energy. It does not cover green power sold by independent marketers except for cases in which the marketers work in conjunction with utilities or default electricity suppliers.<sup>1</sup>

At the end of 2006, green pricing sales were equivalent to more than 1,000 MW of new renewable energy capacity. Thus, green pricing continues to be a viable strategy for supporting the development of new renewable energy sources. While utility green power programs continue to exhibit strong growth in overall sales, current success can be attributed to a relatively small number of programs.

The following is a summary of key findings from this analysis.

### Consumer Response

- In 2006, utility green power programs continued to exhibit strong growth. Collectively, utilities sold 3.8 billion kilowatt-hours (kWh) of green power to more than 560,000 customers. A relatively small number of programs still account for the majority of utility green power sales and customers, with the top 10 programs accounting for about two-thirds of sales and 60% of customers.
- Programs offered in restructured electricity markets grew slightly faster than those in regulated markets, but growth rates slowed significantly from 2005. This slowdown may be a sign that these relatively new programs are maturing.
- In traditionally regulated electricity markets, sales through utility green pricing programs increased nearly 40% following an increase of 33% in 2005 and growth rates in excess of 40% from 2002 to 2004. The number of customers participating in green pricing programs increased by about 20%, a slower pace than sales.
- The average participation rate across all green pricing programs continued to climb modestly, increasing to 1.8% from 1.5% in 2005. The top 10 utility green pricing programs exhibited participation rates ranging from 5% to 17%.

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<sup>1</sup> For data on the entire voluntary renewable energy market, see Bird and Swezey (2005a).

- The fraction of customers dropping out of green pricing programs in 2006 was about 6%,<sup>2</sup> consistent with 2005, but down from previous years.

### Renewable Energy Supplies

- Of the total kilowatt-hours (kWh) sold through utility green power programs, nearly 90% was from power purchases or renewable energy certificates (RECs), with about 10% from utility-owned projects and less than 1% from customer-sited systems.
- The use of RECs continued to climb, with utilities purchasing more than 1.7 billion kWh of RECs to serve green pricing customers in 2006. This represents a 70% increase from 2005 levels and a 17-fold increase from 2002. RECs represented nearly half of all green pricing sales in 2006.
- The vast majority of green pricing sales (about 85%) were sourced from “new”<sup>2</sup> renewable energy facilities. Wind energy accounted for 78% of sales, followed by biomass (15%), hydro (4%), geothermal (3%), and solar (0.2%).
- Renewable energy sales to green pricing customers represent a capacity equivalent of more than 1,000 MW of new renewable energy sources.

### Pricing and Revenues

- The average price premium charged for green power through green pricing programs continued to decline, falling to 2.12¢/kWh from 2.36¢/kWh in 2005, and 2.45¢/kWh in 2004. Since 2000, the premium has declined at an annual average rate of more than 8%. The median price premium fell below 2¢/kWh for the first time to a low of 1.78¢/kWh.
- A number of utilities reduced their green pricing premiums because of higher fossil fuel costs or because they were able to enter into more favorable contracts for renewable energy supplies.
- In 2006, residential customers spent about \$5 per month on average for green power through utility programs, consistent with previous years.

### Marketing

- About a dozen utilities (13%), including those in deregulated electricity markets, indicated that they were working with a third-party marketer. These utilities had higher participation and sales rates than utilities that did not partner.
- As might be expected, utility expenditures on marketing for green power programs vary by utility size. However, there was significant variability in expenditures by the largest utilities, and a few utilities reported spending as much as 10 times more than utilities of similar size. The top performers generally spent more on marketing than other utilities.
- Expenditures on administration also varied to some degree by utility size, but most utilities reported spending less than \$50,000 on administration, including some of the largest utilities.
- Utilities reported a median cost of \$30 for acquiring new residential customers, as in previous years. The top performers<sup>3</sup> reported similar acquisition costs.

<sup>2</sup> New is defined as renewable resources placed in service on or repowered after January 1, 1997, consistent with the definition used by the Green-e certification program [http://www.green-e.org/what\\_is/standard/standard.html](http://www.green-e.org/what_is/standard/standard.html) and other programs such as the Environmental Protection Agency’s Green Power Partnership.

<sup>3</sup> The top performers are defined as those that were among the top 10 programs for customer participants, green power sales, and customer participation rate, according to the NREL rankings (see Appendix C).

- About 40% of utilities reported that some portion of program costs is not covered by participants. The most common reason cited is that the utility does not attribute some of the marketing and administrative costs to the program.
- On average, utilities used at least six of the marketing techniques listed in the questionnaire to publicize their green pricing program in 2006, while the top performers used an average of seven.
- The marketing techniques that utilities ranked as most effective include utility newsletters, bill inserts, publicity, direct mail, and bangtails.<sup>4</sup>

### **Program Implementation**

- Slightly more than half of utilities reported that they had conducted customer research to aid in the design or implementation of their green pricing programs, compared to 80% of the top performers. About 40% of utilities reported performing a program evaluation, compared to about two-thirds of the top performers.
- The most common added benefits that utilities offer to their green power customers are: 1) inform customers about the status of the program through newsletters that provide periodic program updates, 2) offer a welcome kit to new participants, 3) recognize business customers through ads in local media, 4) provide decals that can be displayed in windows, and 5) recognize participants with plaques or other items. The top performers reported providing an average of five of the added benefits listed in the questionnaire compared to four for all programs.

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<sup>4</sup> Bangtails are advertisements that are attached to mail-in envelopes; they must be ripped off the envelope before they can be placed in the mail.

## Introduction

Utilities first began offering consumers a choice of purchasing electricity generated from renewable energy sources in the early 1990s. Since then, the number of U.S. utilities offering green pricing programs has steadily grown. Today, more than 750 utilities—or about 25% of all utilities nationally—offer their customers green power options. Because some of these utilities offer programs in conjunction with cooperative associations or other public power entities, the number of distinct programs is about 150. Through these programs, more than 70 million customers have the ability to purchase renewable energy to meet some portion or all of their electricity needs, or make contributions to support the development of renewable energy resources. Typically, customers must pay a premium above standard electricity rates for this service.

Since 1999, the National Renewable Energy Laboratory (NREL) has compiled data on utility green pricing programs on an annual basis. Initially, the data covered consumer response and program-design features, such as participation and retention rates, price premiums, enrollment requirements, and new renewable energy capacity installed to supply green pricing programs.<sup>5</sup> Beginning in 2002, NREL added data on marketing and program implementation, covering areas such as customer acquisition costs, marketing strategies and budgets, program-evaluation efforts, procurement of supplies, and methods of enrolling and providing value to customers.

In 2004 and 2005, the data collection efforts were expanded to include utility programs implemented in conjunction with independent marketers in restructured electricity markets. Because of significant differences in the design and implementation of these programs, data on programs offered in restructured markets are only included in estimates of total sales and customers, except as noted. All other data on pricing, program design, marketing, and implementation are for utility programs offered in traditionally regulated electricity markets only, which we refer to as “green pricing.” Data from previous years are presented in detail in Bird et al. (2004), Bird and Cardinal (2004), and Bird and Brown (2005), respectively.

This report presents detailed data on utility green pricing programs compiled for year-end 2006, and examines trends in consumer response and program implementation since 2000. The data provided in this report can be used by utilities to benchmark the success of their green pricing programs. It is important to note that this report covers only a portion of voluntary markets for renewable energy. It does not cover green power sold by independent renewable energy marketers except for cases in which the marketers work in conjunction with utilities.<sup>6</sup>

## Data Collection and Methodology

The information presented in this report is based on data provided to NREL by utilities operating green power programs. In 2006, a questionnaire was distributed via e-mail to 145 green power program managers representing about 135 individual green power programs (see **Appendix A** for the questionnaire and **Appendix B** for a list of utilities that offer green pricing programs). In

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<sup>5</sup> The results are summarized in Swezey and Bird 1999; 2000.

<sup>6</sup> For data on the entire voluntary renewable energy market, see Bird and Swezey (2005a).

a few instances, the questionnaire was distributed to several distribution utilities that participate in a single green pricing program offered through a generation-and-transmission cooperative or public power supplier. This was done because some power suppliers do not collect data from participating distribution utilities or are not able to provide data on marketing and program implementation. As in 2005, data were collected from a number of utility programs that are offered in conjunction with third-party marketers in states that have implemented retail competition. These responses were only included in the estimates of total utility green power customers and sales. Responses were received for 96 programs, yielding an overall active program response rate of 67%. Where possible, data gaps were filled with information obtained from utility Web sites, follow-up phone calls, and published reports (Washington CTED and UTC 2006), as well as data received in previous years.

## Customer Participation

### Number of Customers

At the end of 2006, about 570,000 customers were participating in utility green power programs nationally, including programs offered in regulated and restructured electricity markets (**Table 1**).<sup>7</sup> As in the past, a relatively small number of green power programs account for the majority of customers, with just 10 programs accounting for 60% of all participants (**Appendix C**).<sup>8</sup> In 2005, the top 10 programs accounted for 65% of all participants nationwide.

**Table 1. Number of Participants in Utility Green Power Programs (in Regulated and Competitive Electricity Markets)**

	2004	% Change 05/04	2005	% Change 06/05	2006
Utility Green Pricing Programs in Regulated Markets	331,800	19%	394,700	23%	486,300
Utility Programs in Restructured Electricity Markets	29,400	107%	60,800	34%	81,400
Total	361,200	26%	455,500	25%	567,700

In 2006, about 81,000 customers participated in utility/marketer programs in restructured electricity markets. These programs differ from utility programs offered in traditionally regulated electricity markets in that they involve independent marketers working in conjunction with the incumbent utilities (or default service providers) to offer renewable energy products to retail consumers. Under these programs, customers can purchase green power without switching from default or standard-offer service. Examples include the Connecticut *CleanEnergyOptions* program and the National Grid *GreenUp* program.

<sup>7</sup> NREL obtained consumer response data for nearly 70% of utility green pricing programs in 2006, including all of the major programs. The remaining programs, which are smaller in size, do not have a large impact on overall participant numbers.

<sup>8</sup> NREL issues four different top 10 lists based on total sales of renewable energy to program participants, total number of customer participants, customer participation rates, and the premium charged to support new renewables development. These lists can be found at <http://www.eere.energy.gov/greenpower/markets/pricing.shtml?page=3>.

In 2006, the number of participants in programs offered in restructured markets increased by about one-third, after more than doubling in 2005. While growth in customer acquisition in these programs has slowed, the growth rate is still higher than for utility green pricing programs (23%). Part of the slowdown in 2006 simply may be due to maturation. As programs mature, they may capture more of their target market, making additional customer acquisition slower or more expensive. On the other hand, the fact that these programs are primarily promoted by companies specializing in renewable energy marketing who are heavily financially vested in the success of the programs may have contributed to the high growth rates relative to other programs.

**Table 2** presents the number of customers participating in utility green pricing programs offered in traditionally regulated electricity markets since 2000. From 2000 to 2006, the number of customer participants increased nearly fourfold, with growth rates during the past several years ranging from 16% to 25%.

**Table 2. Estimated Cumulative Number of Customers Participating  
 in Utility Green Pricing Programs (Regulated Electricity Markets Only)**

Customer Segment	2000	2001	2002	2003	2004	2005	2006
Residential	131,000	166,300	224,500	258,700	323,700	383,400	470,800
Nonresidential	1,700	2,500	3,900	6,500	8,100	11,300	15,500
Total	132,700	168,800	228,400	265,000	331,800	394,700	486,300
% Total Annual Growth	98%	27%	35%	16%	25%	19%	23%
% Residential Growth	n/a	27%	35%	15%	25%	18%	23%
% Nonresidential Growth	n/a	47%	56%	67%	25%	40%	37%

**Table 2** delineates residential and nonresidential customer participation in utility green pricing programs over time. The vast majority of participants are residential customers, with nonresidential customers accounting for only 3% of all participants. During 2006, the number of residential and nonresidential customers grew at different rates, with the nonresidential sector growing by 37% and the residential sector by 23%. The faster growth rate in nonresidential participation was also true in previous years, with the exception of 2004 when both residential and nonresidential customers grew by about 25%. This trend of increasing nonresidential purchasers has a significant impact on overall sales volume, as nonresidential green power purchases outstrip residential green power purchases by a wide margin.

In 2006, eight respondents (or 8%) reported that the program was not open to new customers, compared to four fully subscribed programs in 2005. Six of the eight programs closed to new customers in 2006 were maintaining waiting lists, while the utility was seeking additional renewable energy supplies. The presence of oversubscribed programs can limit overall participation rates if the utilities are not meeting all available consumer demand.

### Participation Rates

At the end of 2006, the average rate of participation in utility green pricing programs among eligible utility customers was 1.8%, with a median of 1% (**Table 3**). Although the average rate



has increased slightly from last year (up from 1.5%), the median remains unchanged. The top 25% of programs had participation rates of 2.2% or greater (**Table 4**). The 10 programs with the highest participation rates achieved participation rates of between 5% and 17% in 2006, up slightly from 2005 (**Appendix C**).<sup>9</sup> With relatively few exceptions, participation rates remain well below those predicted in early utility market research (see, for example, Farhar 1999).

Some possible explanations for the relatively slow increase in participation rates include: 1) a general lack of awareness among customers, 2) lack of sustained marketing efforts on the part of some utilities, 3) poor value propositions, or 4) the addition of new programs, which are averaged with the performance of more established programs. (Holt and Holt 2004, Swezey and Bird 2001).

**Table 3. Customer Participation Rates in Utility Green Pricing Programs**

Participation Rate	2000	2001	2002	2003	2004	2005	2006
Average	1.2%	1.3%	1.2%	1.2%	1.3%	1.5%	1.8%
Median	0.7%	0.7%	0.8%	0.9%	1.0%	1.0%	1.0%
Top 10 programs	2.6% - 7.3%	3.0% - 7.0%	3.0% - 5.8%	3.9% - 11.1%	3.8% - 14.5%	4.6% - 13.6%	5.1% - 16.9%

**Table 4. Customer Participation Rates in Utility Green Pricing Programs (2004-2006)**

Participation Rate	2004	2005	2006
25 <sup>th</sup> Percentile	0.3%	0.4%	0.5%
50 <sup>th</sup> Percentile (Median)	1.0%	1.0%	1.0%
75 <sup>th</sup> Percentile	1.4%	1.8%	2.2%

**Table 5** shows that across all utilities, the average participation rate for green pricing programs in 2006 for residential and nonresidential customers was 1.8% and 0.5%, respectively. Despite the small increase in average residential participation, average nonresidential participation decreased slightly. The lower participation rates among nonresidential customers may be explained, in part, by the fact that some programs place less emphasis on the nonresidential sector. Also, nonresidential customers as a whole may be more price-sensitive (due to the larger quantities of green power purchased) and perhaps less willing to pay a premium than residential consumers. Furthermore, some nonresidential consumers could be purchasing RECs from an independent REC marketer, perhaps at lower cost, rather than participating in the utility program.

<sup>9</sup> From 2000 to 2002, the high end of the range declined because the utility with the highest participation rate (Moorhead Public Service) experienced an increase in its overall customer base, while the number of participants in its green pricing program remained steady. The program was fully subscribed in 2000, and the utility has not attempted to expand it. Likewise, the high end of the range declined from 2004 to 2005, because the number of participants in the Lenox Municipal Utilities green power program essentially remained constant, while its customer base increased.

**Table 5. Green Pricing Participation Rates by Customer Segment**

	Residential Participation Rate %			Nonresidential Participation Rate %			Total Participation Rate %		
	'04	'05	'06	'04	'05	'06	'04	'05	'06
Average	1.4	1.6	1.8	0.4	0.7	0.5	1.3	1.5	1.8
Median	1.1	1.2	1.1	0.2	0.2	0.3	1.0	1.0	1.0

The number of respondents was 80 in 2004, 89 in 2005, and 97 in 2006.

## Retention of Customers

In 2006, utilities reported that an average of 6% and a median 4% of customers dropped out of green pricing programs. These figures continue the downward trend first seen in 2005, despite the fact that electricity and energy prices have remained high in most regions of the country (**Table 6**).

As in previous years, utilities that have reported higher-than-average turnover rates among green power customers also cite high turnover among all utility customers; for example, several of these utilities have service territories that include large universities where high customer turnover is recurrent. One utility also cited particularly high attrition rates after announcing plans to build a new coal-fired power plant, which regional environmental organizations opposed. And a few utilities have experienced higher-than-average decreases in enrollment as a result of general rate increases.

One effective strategy for reducing attrition is making an effort to retain participants in the program when they move within the utility service territory. Also, continuing to communicate the success and benefits of the program to consumers may help alleviate problems with attrition. Consumers may need to be reminded periodically of the value of the program and the impact that their expenditures have had. Many programs do so via a periodic newsletter, delivered either physically or electronically. Finally, offering tangible benefits such as exempting customers from fossil fuel cost increases may help retain customers.

**Table 6. Percentage of Customers Dropping Out of Green Pricing Programs**

	2002	2003	2004	2005	2006
Median	2.5%	6.6%	8.8%	5.1%	3.7%
Average	4.3%	7.1%	9.8%	6.5%	5.9%

## Renewable Energy Sales and Supplies

### Green Power Sales and Revenues

Collectively, utilities sold nearly 4 billion kilowatt-hours (kWh), or about 440 average megawatts (aMW), of green power to customers in 2006 (**Table 7**). Overall, green power sales (in kWh) increased 40% from 2005. This increase is mostly attributable to an increase in nonresidential participation. Sales of renewable energy through utility programs in competitive electricity markets grew 46% during 2006, generally on par with green pricing growth rates, but significantly below the doubling that occurred in 2005. This slower growth rate may be explained by general program maturation; the doubling in 2005 may have resulted from a number of relatively new offerings, which benefited from the promotions that come with new offerings and picking up the so-called “low hanging fruit,” the first level of participants who are pre-disposed to participate.

As in 2005, the top 10 green pricing programs represented the bulk of all green power sales nationwide. In 2006, 71% of kWh sold were attributed to the top 10 programs (in terms of green power sales), with one program alone (Austin Energy) accounting for 15% of all green power sales nationwide (**Appendix C**). Austin Energy’s sales success stems in part from the fact that it allows customers to lock in the price of green power at a fixed rate for up to 10 years, which has been particularly popular among nonresidential customers. It is interesting to note that nonresidential participants represented about 3% of overall participants, but represented more than one-third of total program sales in terms of kWh (**Table 8**).

**Table 7. Sales of Renewable Energy through Utility Green Power Programs in Regulated and Competitive Electricity Markets (million kWh)**

	2004	2005	2006	% Change '05-'04	% Change '05-'06
Utility Green Pricing Programs in Regulated Markets	1,839	2,448	3,404	33%	39%
Utility Programs in Competitive Electricity Markets	136	291	425	114%	46%
Total	1,975	2,738	3,829	39%	40%

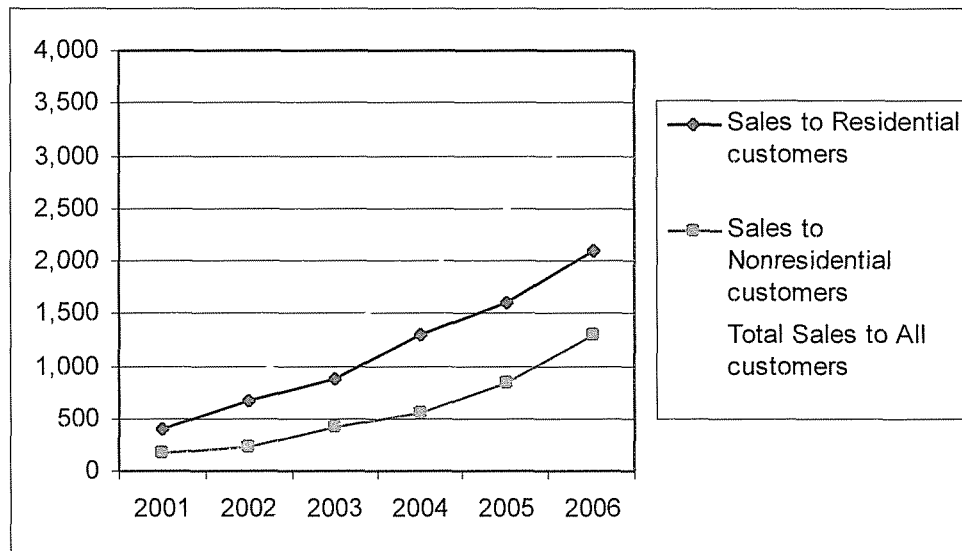
**Table 8** presents sales of renewable energy through utility green pricing programs in regulated electricity markets over time. Green pricing program sales to all customer classes grew by 39% in 2006, compared to rates ranging from 33% to 56% in the past several years (**Figure 1**). The growth in sales can be attributed to the larger number of customers purchasing green power as well as larger purchases, particularly among nonresidential customers (**Table 9**). On average, residential customers purchased about 4,400 kWh of green power annually in 2006, nearly twice the level of purchases in 2001, while nonresidential customers purchased an average of 85,000 kWh in 2006.<sup>10</sup> These increases in purchase levels are likely due to a larger number of programs that require participants to purchase green power for a more substantial fraction of their electricity use (e.g., 100%), as well as decreases in some green pricing premiums.

<sup>10</sup> Note that estimates of average purchases have been revised for years 2002 to 2004 for those reported in Bird and Brown (2004), which were averaged across utility programs. Estimates presented here are calculated based on total sales and customer participants.

**Table 8. Annual Sales of Renewable Energy through Utility Green Pricing Programs (Regulated Electricity Markets Only), millions of kWh**

	2001	2002	2003	2004	2005	2006
Sales to Residential customers	400	661	874	1,295	1,606	2,103
Sales to Nonresidential customers	173	234	410	544	842	1,302
Total Sales to All customers	573	895	1,284	1,839	2,448	3,404
% Annual Growth in Total Sales	26%	56%	43%	43%	33%	39%
% Nonresidential of Total Sales	30%	26%	32%	30%	34%	38%

Totals may not add due to rounding.



**Figure 1. Annual Sales of Renewable Energy Through Utility Green Pricing Programs (Regulated Electricity Markets Only), millions of kWh**

**Table 9. Average Purchases of Renewable Energy Per Customer (kWh/year)**

	2001	2002	2003	2004	2005	2006
Residential Customers	2,400	2,900	3,400	4,000	4,200	4,400
Nonresidential Customers	69,200	60,000	63,100	67,200	74,500	85,700
All Customers	3,400	3,900	4,800	5,500	6,200	6,700

## Renewable Energy Resources Supplying Green Pricing Programs

Most programs use new renewable energy sources to supply their green pricing programs, with roughly 90% of sales supplied from new renewable energy facilities.<sup>11</sup> Of total sales, wind resources supplied 78%, followed by biomass (including landfill gas) (15%), hydro (4%), geothermal (3%), and solar (<1%) (Table 10 and Figure 2). These fractions are similar to those

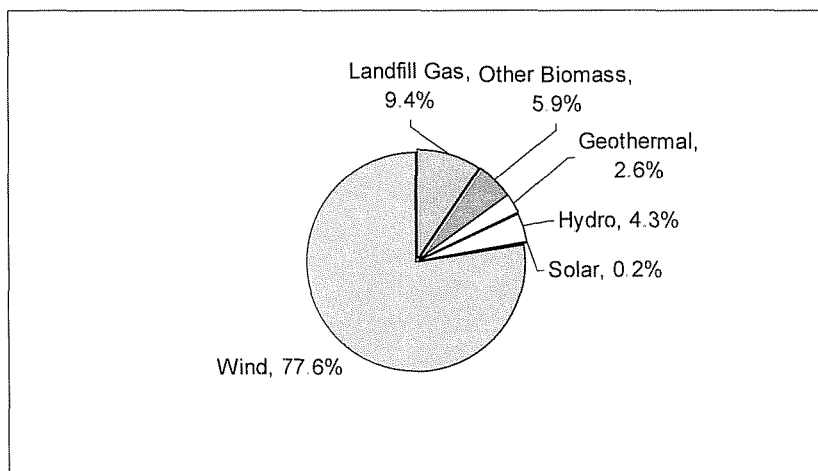
<sup>11</sup> New is defined as renewable resources placed in service or repowered on or after January 1, 1997, consistent with the definition used by the Green-e certification program [http://www.green-e.org/what\\_is/standard/standard.html](http://www.green-e.org/what_is/standard/standard.html) and other programs such as the Environmental Protection Agency's Green Power Partnership.

reported in 2005. Wind, solar, and landfill gas are the renewable resources most commonly featured in green pricing programs. For example, many utilities offer products that include some solar, but the contribution of solar to the total green power program resource mix on a generation basis is relatively small.

Renewable energy sold through green pricing programs in 2006 represents an equivalent renewable energy capacity of more than 1,100 MW, with more than 1,000 MW of this represented by new renewable energy resources.<sup>12</sup> Wind energy represents more than 95% of the total capacity supplying green pricing programs.

**Table 10. Renewable Energy Generation and Capacity Supplying Green Pricing Programs (2006)**

	Landfill Gas	Other Bio	Geothermal	Hydro	Solar	Wind	Total
Sales MWh	321,000	201,000	89,000	146,000	7,200	2,641,000	3,404,000
% of Total Sales	9.4%	5.9%	2.6%	4.3%	0.2%	77.6%	100%
Capacity Factor	0.9	0.8	0.9	0.5	0.2	0.3	
Total MW	41	29	11	33	4	1,004	1,123
MW New RE	27	16	<1	5	4	992	1,044



**Figure 2. Renewable Energy Sources Supplying Green Pricing Programs (2006)**

In 2005, sales of renewable energy through green pricing programs represented nearly 800 MW of renewable energy capacity, with about 740 MW of that from new renewable energy sources. In previous years, capacity estimates were based on renewable energy projects used to serve green pricing programs, rather than derived from renewable energy sales.<sup>13</sup> Therefore, the 2006 and 2005 estimates of capacity are not directly comparable to capacity estimates from previous years (see **Table 11**). However, the two approaches yield relatively consistent results.

<sup>12</sup> Capacity factors are derived from EPRI and U.S. DOE *Renewable Energy Technology Characterizations*, TR-109496, December 1997.

<sup>13</sup> For details on the derivation of these previous year estimates, see Bird and Swezey (2005b).

**Table 11. Estimated Cumulative Capacity Supplying Utility Green Pricing Programs (1999-2004)**

	1999	2000	2001	2002	2003	2004
Cumulative MW	68	77	221	279	510	706
Annual Growth %	--	14%	188%	26%	82%	38%

Note: Capacities based on project nameplate capacities.

While many programs use blends of renewable energy sources, more than half of programs feature only one energy source. Of these, most feature wind, while a smaller number feature strictly solar or biomass. The remaining programs offer a blend of two or more resources.

### Renewable Energy Sales vs. Total Utility Sales

In 2006, green power sales still represented a small but increasing proportion of a utility company's overall energy sales. **Table 12** shows that, on average, renewable energy sold through green pricing programs represented about 0.5% of total utility electricity sales (on a kWh basis) in 2006. Green power sales to residential consumers represented about 1% of residential electricity sales, and nonresidential green power sales were about 0.4% of nonresidential electricity sales. The 2006 figures are consistent with the upward trend shown in previous years (**Table 13**). Half of programs reported green power sales of 0.25% of total electricity sales or more, while a few utilities reported fractions as high as about 5% of total retail electricity sales.

**Table 12. Renewable Energy Sales as a Percent of Utility Electricity Sales (2006)**

Customer Class	Average	25 <sup>th</sup> Percentile	Median (50 <sup>th</sup> Percentile)	75 <sup>th</sup> Percentile	Range
Residential	0.95%	0.11%	0.38%	0.91%	0% - 13.4%
Nonresidential	0.42%	0.01%	0.09%	0.37%	0% - 6.6%
All customers	0.54%	0.07%	0.25%	0.53%	0% - 5.2%

**Table 13. Renewable Energy Sales as a Percent of Utility Electricity Sales (2004-2006)**

Customer Class	2004			2005			2006		
	Avg.	Med.	Range	Avg.	Med.	Range	Avg.	Med.	Range
Residential	0.70%	0.40%	0% - 10.2%	0.89%	0.34%	0% - 13.7%	0.95%	0.38%	0% - 13.4%
Nonresidential	0.20%	0.02%	0% - 3.7%	0.23%	0.04%	0% - 4.8%	0.42%	0.09%	0% - 6.6%
All customers	0.40%	0.20%	0% - 3.2%	0.48%	0.2%	0% - 4.0%	0.54%	0.25%	0% - 5.2%

On average, residential customers spent \$5.20 per month to purchase or support green power through utility programs in 2006 (**Table 14**), up from 2005 levels, but generally consistent with previous years.

Utility green pricing programs collected an estimated \$40 million in green power revenues in 2006 (**Table 14**). After a slight dip in 2005, green power revenues increased again in 2006. While many utilities have lowered the premiums that they charge for green power, increased sales have led to higher revenues. Green pricing program revenues are typically used to pay the above-market costs of renewables, as well as the costs of administering and marketing the program—although the treatment of the latter differs by utility (see discussion in the Marketing section of Holt and Holt 2004, Swezey and Bird 2001).

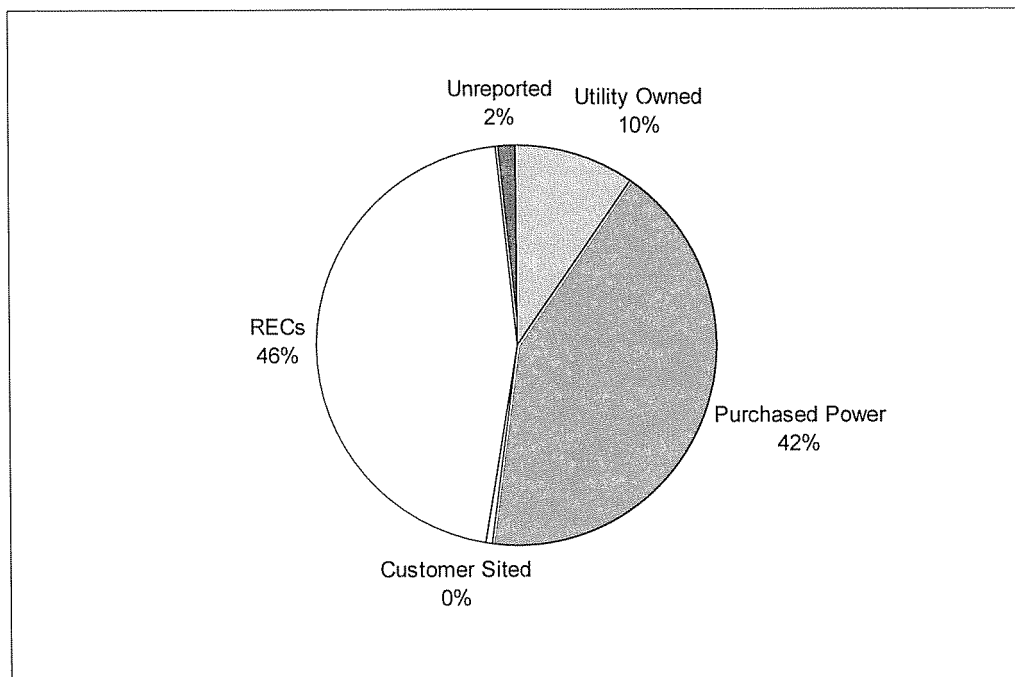
**Table 14. Residential Monthly Expenditures on Green Power and Annual Program Revenues**

	2003	2004	2005	2006
Average monthly residential expenditures	\$5.50	\$5.30	\$4.49	\$5.20
Annual utility revenues from green power	\$20 million	\$32 million	\$25 million	\$40 million

Note: Revenues estimated from annual kWh sales and reported price premiums. Some premiums may change monthly or periodically with changes in fuel costs and this was not accounted for in the estimates.

### Ownership vs. Purchases of Supplies

Measured as a percent of total kWh, nearly 90% of green energy sold through utility green pricing programs was from power purchases or RECs, with only about 10% from utility-owned projects and less than 1% from customer sited systems (**Figure 3**). But as a percentage of green pricing programs, a much larger portion, nearly one quarter of all programs, are sourced entirely from utility-owned projects. Another 55% of utilities either purchase all of their power from an independent power generator or purchase renewable energy certificates (RECs) from a marketer or supplier (**Table 15**). The remaining utilities use a combination of these approaches to supply their green power programs.



**Figure 3. Fraction of Utility Green Power Sales by Source**

The distribution in the types of sources green pricing programs used to power their programs changed little in 2006 from 2005, with some increase in the use of power from customer-sited systems. One trend that has been consistent since 2003 is an increased reliance on REC purchases. Collectively, utilities purchased more than 1.7 billion kWh of RECs to serve green power customers in 2006, an increase of 70% over 2005 (**Table 16**). But programs using RECs exclusively or for at least half of their supplies actually decreased for 2006; it was mainly programs that used RECs in combination with owned and purchased green power that accounted for the overall increase.

**Table 15. Utility Procurement of Renewable Energy Supplies**

Fraction of Supplies	Own Generation		Purchase Power		Purchase RECs		Purchase from Distributed Systems	
	2005	2006	2005	2006	2005	2006	2005	2006
For 100% of program power supplies	25%	23%	27%	25%	32%	30%	3%	3%
For at least 50% of program power supplies	32%	30%	42%	42%	35%	34%	3%	3%
For any fraction of program power supplies	43%	39%	47%	45%	35%	40%	9%	14%

Note: Percentages based on 80 programs in 2005, and 88 in 2006.

**Table 16. REC Purchases by Utilities to Supply Green Pricing Programs**

	2002	2003	2004	2005	2006
REC purchases by utilities for green pricing programs (million kWh)	103	419	707	1,030	1,750
REC purchases as percent of total green pricing sales	11%	33%	38%	42%	46%
% change from previous year	n/a	307%	69%	46%	70%

RECs are also increasingly being used in programs across the country, which may simply indicate that RECs are becoming an increasingly common way of purchasing renewable energy in the marketplace. In 2003, about three-quarters of utilities that supplied their programs with RECs were in the Pacific Northwest; in 2006, fewer than half of the utilities using RECs were in the Pacific Northwest. Utilities that reported purchasing RECs for some portion of their program supplies in 2006 covered 16 states, including Arizona, California, Colorado, Florida, Idaho, Illinois, Massachusetts, Montana, New York, Oregon, Pennsylvania, Rhode Island, Utah, Vermont, Washington, and Wisconsin. Generally, most utility programs purchase RECs sourced from projects that are located near the utility's service territory.



## Product Type

Most utility green pricing programs are structured so that customers can purchase renewable energy to meet some or all of their electricity needs. The green power premium charged in these “energy-based” programs is typically expressed in ¢/kWh or \$/kWh block. Other programs are structured to allow customers to contribute funds that support the development of renewable energy sources. These so-called “contribution programs” have become less common, and currently represent fewer than 10% of all programs.<sup>14</sup>

## Energy Blocks vs. Percentage of Use

Most programs are structured so that customers can purchase blocks of green power. Block sizes range from 20 kWh (for energy derived exclusively from solar systems) to 1,000 kWh (for wind energy or renewable energy blends). Block sizes range typically from 100-200 kWh. Many utilities offer larger block sizes to nonresidential customers, in some cases at a reduced per-kWh premium over that offered to residential customers.

The remaining programs allow customers to purchase green power for some fraction of their electricity needs. Most of these programs allow residential customers to elect to have 25%, 50%, or 100% of their electricity supplied from renewable sources, while a few offer fractions as small as 10%. Often, commercial and industrial customers can purchase green power for a smaller fraction of their electricity use than is available for residential customers.

Regarding the question of whether it is better to offer a percent-of-use option or kWh-blocks, some marketers have argued that it is difficult to communicate the concept of a kWh-block to consumers, because customers do not understand kilowatt-hours and are not used to thinking about them. Some marketers have found that this is a significant barrier to enrolling customers. They argue that consumers can more easily understand a product that is presented as a percentage of electricity use. On the other hand, selling blocks of renewable energy may provide additional flexibility to consumers to enable them to purchase smaller increments (although this could also be accomplished by offering a small percent-of-use option). Another potential benefit for customers of purchasing blocks is that the green power premium remains fixed for the customer each month and does not vary along with electricity consumption. Some programs have reported that their billing and administrative systems cannot readily accommodate percent-of-use program structures.

## Pricing

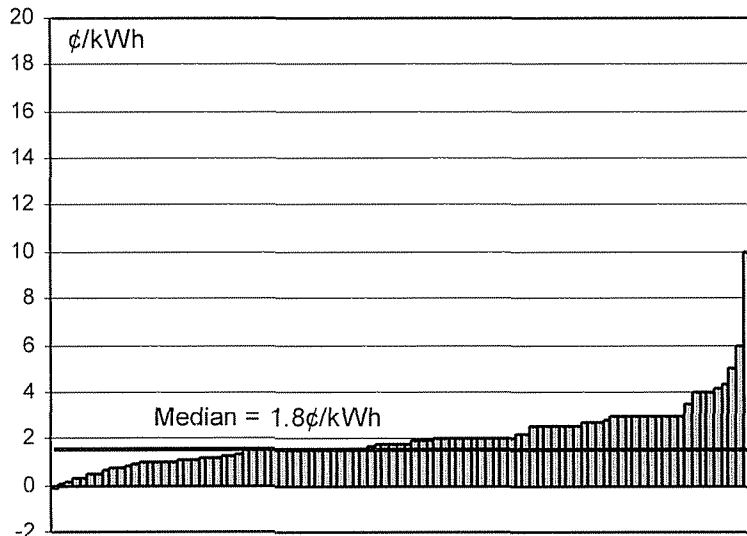
In 2006, price premiums for energy-based programs ranged from -0.1¢/kWh to 17.6¢/kWh, with an average premium of 2.1¢/kWh and a median of 1.8¢/kWh. These premiums have been adjusted to account for any fuel cost exemptions granted to green power program participants. It

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<sup>14</sup> In the past, a few utilities have offered programs through which customers make a monthly payment tied to the amount of renewable energy capacity that is supported (“capacity-based programs”). For example, customers might be offered the option to pay \$6 each month to support 100 watts of solar energy-generating capacity. Capacity-based programs are no longer actively marketed and, in some cases, have been phased out in favor of energy-based or contribution programs.

is also interesting to note that the average premium drops to 1.9¢/kWh if calculated without the two outliers with premiums of 10.0¢/kWh or greater.

**Figure 4** displays price premiums for individual utility programs—solar-based products dominate the high end of the price range. In 2006, the utility programs with the lowest premiums for energy derived from new renewable sources had premiums ranging from -0.1¢/kWh to 1¢/kWh.



**Figure 4. Green Power Premiums Cents/kWh (2006)**

In 2006, price premiums continued to decline, decreasing about 10% from 2005. Since 2000, the average price premium has dropped at an average annual rate of 8%. For the first time, the nationwide median premium dipped below 2¢ (**Table 17**).

**Table 17. Price Premiums of Utility Green Power Products (¢/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	0.33 - 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	0.33-1.0	(0.7)- 0.9	(0.1)-1.0
Number of Programs Represented	50	60	80	91	101	104	97

\*Represents the 10 utility programs with the lowest price premiums for new customer-driven renewable energy. This includes only programs that have installed – or announced firm plans to install or purchase power from – new renewable energy sources. In 2001 the discrepancy between the low end of the range for all programs and the top 10 programs results from the program with the lowest premium (0.9¢/kWh) not being eligible for the top 10 because it was either selling some existing renewables or had not installed any new renewable capacity for its program.

During 2006, about a dozen programs modified the price premium charged for green power, with all but one resulting in a premium decrease. For those utilities that reduced their premiums, most attributed the reduction to the exemption of green power customers from fossil fuel charges, their ability to renegotiate power purchase contracts at lower rates, or the overall improved cost-competitiveness of renewable energy sources. Other reasons that have contributed to the decline in premiums over time are higher-than-expected capacity factors, and natural gas price increases, which have reduced the cost spread between renewable energy and gas-fired generation.

About a dozen programs have reported that they explicitly charge different price premiums for residential and nonresidential consumers. Generally, most of these programs charged lower premiums to nonresidential consumers, with some offering bulk purchase discounts for large green power purchases.<sup>15</sup> In these programs, the premium charged to nonresidential customers generally ranged from about 0.5¢/kWh to 1.5¢/kWh less than the residential green power premium.

Because most renewable energy facilities do not rely on fuel, some utilities offer fixed-price green power products or exempt their green power customers from some fuel-cost charges. A number of utilities include this feature as a component of their green pricing product.<sup>16</sup> One of these utilities also exempts green power customers from the costs associated with making environmental improvements at some of its fossil fuel-generating facilities. Exempting customers from fossil fuel costs can be a particularly important strategy for enrolling large nonresidential customers with greater energy consumption, as evidenced by the success of Austin Energy. Austin Energy's program, which accounts for about 15% of all utility green pricing sales nationwide, offers fixed-price, long-term green power, which has been particularly attractive to their larger customers.

## Marketing

In 2006, we introduced a new question and asked utilities if they actively promoted their green power programs in 2006. In response, 15 program managers (or 17% of respondents) indicated that they were not actively promoting their program in 2006.

### Teaming with Third-Party Marketers

Utilities were also asked to report whether they teamed with third-party marketers to promote their green power programs. About a dozen utilities (13%), including those in deregulated electricity markets, indicated that they were working with a third-party marketer. We found that these utilities had higher participation and sales rates than utilities that did not partner. The average participation rate for programs that partnered with marketers was 4.3% compared to

<sup>15</sup> Utilities that have reported these differences in 2006 or earlier include: Consumers Energy, Continental Cooperative Services/Soyland, Midstate Electric Cooperative, North Carolina utilities participating in NC Green Power Program, PacifiCorp, Park Electric Cooperative, Portland General Electric, Puget Sound Energy, Salt River Project, We Energies, and Wisconsin Public Power Inc.

<sup>16</sup> The utilities include: Austin Energy, Alliant Energy, Clallum County PUD, Edmond Electric, Eugene Water and Electric Board, Green Mountain Power, Holy Cross Energy, Madison Gas & Electric, OG&E Electric Services, We Energies, and Xcel Energy.

1.4% for other utilities. Average green power sales rates were 1.3% for programs that teamed with marketers compared to 0.4% for other programs.<sup>17</sup> Some of this difference may be explained by the fact that third-party marketers are highly financially vested in the success of these programs (Bird and Brown 2006).

### Marketing and Administration Spending

In the questionnaire, utilities were asked to report their marketing and administrative expenditures. Marketing costs were defined as including: “all spending associated with advertising, promoting, and selling the product including labor directly in support of those efforts.” Administrative costs were defined as including: “(labor and non-labor) costs associated with customer service, transactions, billing, training, managing inventories, reporting, and legal/regulatory reviews, etc.” In previous years, marketing costs were defined as not including staff time, but no other explanation was provided in the questionnaire.

As one might expect, spending on marketing for green power programs generally varies with size of the utility, with larger utilities generally spending more. However, **Table 18** shows some notable exceptions in which a few utilities spent as much as 10 times the amount spent by those of a similar size. In addition, there is significant variability in the marketing costs reported by the largest utilities, with several large utilities spending less than \$10,000 and others spending more than \$300,000 (**Table 18 and Figure 5**). The top performers<sup>18</sup> generally spent more on marketing than other utilities. **Figure 6** shows that the top performers represent a large percentage of the utilities spending the most on marketing.

With respect to program-administration spending, expenditures varied to some degree by size of utility, with some larger utilities reporting spending more (**Table 19**). However, most utilities reported spending less than \$50,000 on administration, including some of the largest utilities.

**Table 18. Utility Expenditures on Marketing (2006)**

Number of Utility Customers	Number of Responses									Total
	\$0	\$1 - \$9,999	\$10,000 - \$49,999	\$50,000- \$99,999	\$100,000- \$199,999	\$200,000- \$299,999	\$300,000- \$399,999	\$400,000- \$499,999	\$500,000 or more	
1-99,999	2	26	5	2	1	0	0	0	0	36
100,000-499,999	0	3	13	2	0	0	1	0	0	19
500,000-999,999	0	0	1	1	2	0	0	2	0	6
1,000,000+	0	3	0	0	2	1	4	1	1	12
Total Respondents	2	32	19	5	5	1	5	3	1	73
Top Performers/ % All Respondents	0/0%	5/16%	3/16%	0/0%	2/40%	1/100%	2/40%	3/100%	0/0%	

<sup>17</sup> We conducted a t-test for equality of means and found that the difference in means for both participation rates and sales rates were statistically significant at the 0.10 level.

<sup>18</sup> The top performers are defined as those that were among the top 10 programs for customer participants, green power sales, and customer participation rate, according to the NREL rankings (see Appendix C).

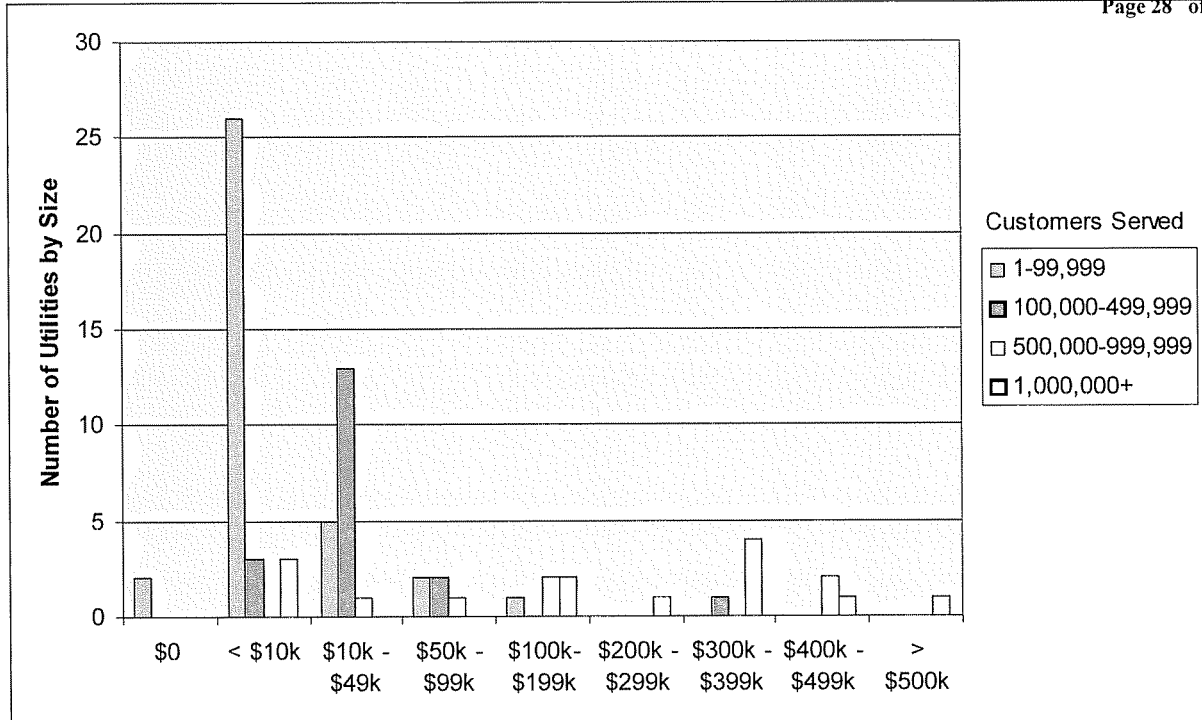


Figure 5. Utility Expenditures on Marketing by Size of Utility (2006)

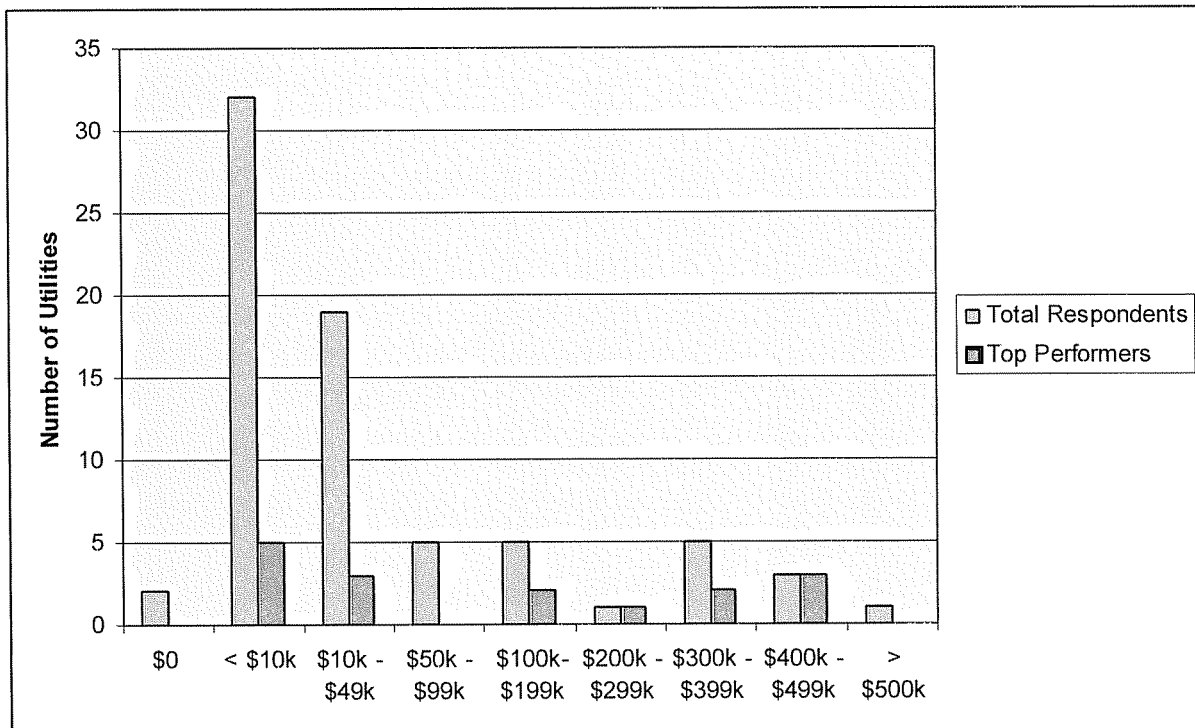


Figure 6. Utility Expenditures on Marketing, Total Respondents and Top Performers (2006)

**Table 19. Utility Expenditures on Program Administration (2006)**

Number of Utility Customers	Number of Responses									Total
	\$0	\$1 - \$9,999	\$10,000 - \$49,999	\$50,000- \$99,999	\$100,000- \$199,999	\$200,000- \$299,999	\$300,000- \$399,999	\$400,000- \$499,999	\$500,000 or more	
1-99,999	4	22	5	0	0	1	0	0	0	32
100,000-499,999	1	4	12	2	0	0	0	0	0	19
500,000-999,999	0	1	1	2	1	0	0	0	1	6
1,000,000+	0	2	2	2	3	1	1	0	1	12
Total Respondents	5	29	20	6	4	2	1	0	2	69
Top Performers/ % All Respondents	1/ 20%	5/17%	2/10%	2/33%	3/75%	1/50%	1/100%	0/0%	1/50%	16/ 23%

In 2006, utilities reported that a median of 10% (average of 23%) of the total green power premium was spent on marketing and program administration (**Table 20**).<sup>19</sup> This is a marked increase from 2005 levels of 2% and 15%, respectively, but consistent with data from 2004. Responses to this question varied widely.

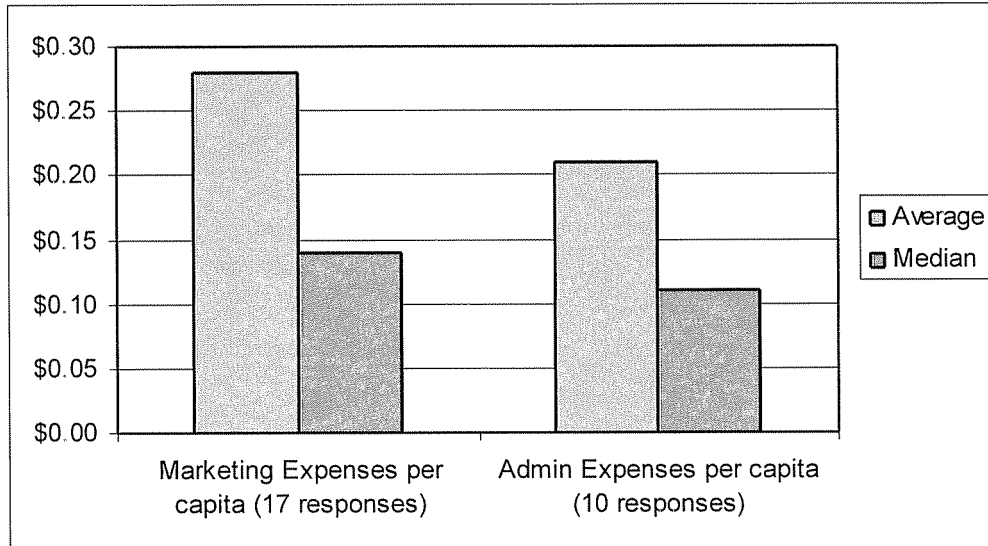
In comparison, the top-performing programs reported spending a median of 28% and an average of 24%. A number of utilities, primarily public utilities and cooperatives, reported that no portion of the premium was used for marketing and administration. For some utilities, this is because they use overall utility marketing for the program and do not include these costs in the program premium, whereas others are not actively promoting their programs. The increase in the fraction of the premium attributed to marketing costs from 2005 levels may reflect the inclusion of labor costs for marketing or an increase in marketing activities by the surveyed utilities.

**Table 20. Marketing and Administrative Expenditures as Percentage of Premium (2006)**

	2003	2004	2005	2006	Top Performers 2006
<b>Average</b>	17%	20%	15%	23%	24%
<b>Median</b>	5%	9%	2%	10%	28%
<b># of Responses</b>	36	60	59	51	16

Seventeen utilities provided actual expenditures on marketing, while 10 provided actual administrative expenses. **Figure 7** displays actual marketing and administrative expenditures on a per customer basis (per all utility customers, not just green power program participants).

<sup>19</sup> In 2002, utilities reported spending a median of 15% (average of 20%) of their program budgets on marketing. It is not possible to compare responses for 2002 and 2003/2004, because the questions differed.



**Figure 7. Marketing and Administrative Expenses Per Utility Customer (2006)**

Forty-six programs (58%) indicated that program participants cover all costs associated with the green pricing program. Of the remaining 33 programs in which nonparticipants cover some costs, most program managers explained that some marketing and administrative costs were not attributed to the program (i.e., spread among all ratepayers). Another less commonly cited reason was that the green pricing program received grants or other contributions.

### Customer Acquisition

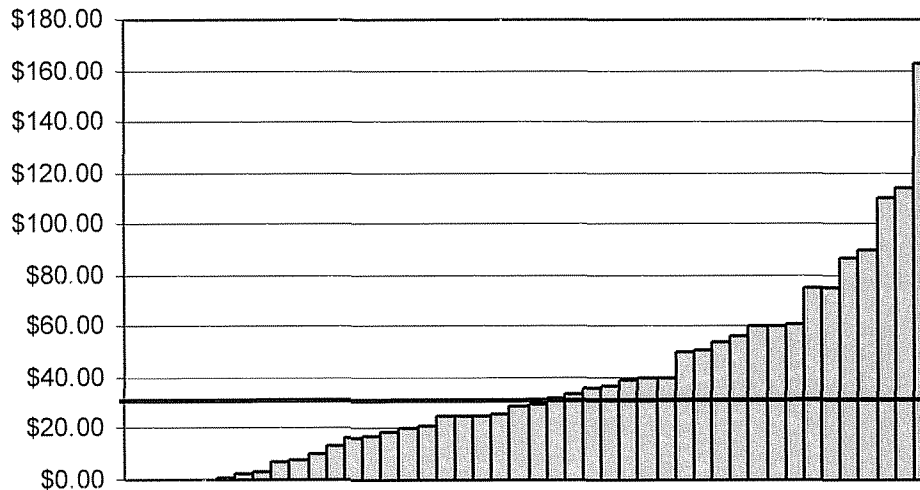
One measure of the cost of marketing a green pricing program is customer-acquisition cost—the marketing expenditures divided by the number of new customers that enroll in the program. For 2006, utilities providing data reported median and average residential customer-acquisition costs for green pricing programs of \$30 and \$38, respectively (**Table 21**).<sup>20</sup> However, the responses varied widely, ranging from \$0 to more than \$160 (**Figure 8**). The top programs reported lower median and average residential customer-acquisition costs of \$28 and \$31, respectively.

Customer-acquisition costs differed somewhat depending on the size of the utility (**Table 22**), with larger utilities reporting higher customer-acquisition costs than small utilities. However, the differences were less pronounced than in previous years. Some of the variability may be due to the types of costs that the utilities included in the calculation.

<sup>20</sup> Only about half of the utilities provided this information. The relative lack of responses may be because some utilities do not track customer-acquisition costs.

**Table 21. Residential Customer-Acquisition Costs by Year**

	2003	2004	2005	2006	2005 Top Performers	2006 Top Performers
Average	\$36	\$42	\$43	\$38	\$31	\$31
Median	\$31	\$30	\$25	\$30	\$27	\$28
No. of Respondents	36	42	43	48	10	12



**Figure 8. Customer-Acquisition Costs (2006)**

**Table 22. Residential Customer-Acquisition Costs by Utility Size**

Size of Utility	2004			2005			2006		
	Avg.	Median	Num. Resp	Avg.	Median	Num. Resp	Avg.	Median	Num. Resp
1-99,999 Customers	\$12	\$4	12	\$27	\$14	21	\$31	\$19	18
100,000-499,999 Customers	\$56	\$35	13	\$97	\$41	9	\$43	\$37	9
500,000-999,999 Customers	\$60	\$55	9	\$40	\$28	7	\$38	\$29	5
1,000,000 Customers	\$41	\$36	9	\$29	\$30	8	\$47	\$33	10
<b>All Utilities</b>	<b>\$42</b>	<b>\$30</b>	<b>43</b>	<b>\$43</b>	<b>\$25</b>	<b>45</b>	<b>\$38</b>	<b>\$30</b>	<b>42</b>



## Marketing Techniques Employed

The 2006 questionnaire asked respondents to indicate the various marketing techniques applied to their green pricing programs (**Tables 23 and 24**). As in previous years, advertising programs through utility newsletters, bill inserts, events, news articles (publicity), and Web marketing were among the top marketing strategies used.<sup>21, 22</sup> Compared to previous years, a greater percentage of utilities reported using newspaper ads, direct mail, radio ads, partnerships with environmental organizations, retail partners, community challenges, and door-to-door marketing.

**Table 23. Number of Marketing Techniques Used by Utilities**

Number of Techniques Used by Utilities	2003	2004	2005	2006
0-1	7%	6%	13%	2%
2-3	26%	20%	20%	26%
4-6	45%	34%	33%	32%
7-9	21%	22%	22%	21%
10-14	n/a	18%	12%	18%
Note: There were 58 responses to this question in 2003, 88 in 2004, 91 in 2005, and 84 in 2006. Percentages may not add to 100% due to rounding.				

In 2004 through 2006, utilities were also asked to rank the effectiveness of the various marketing techniques listed in the questionnaire. Marketing techniques that received average rankings in 2006 above 3 out of a possible 5 included utility newsletters, bill inserts, publicity, direct mail, and bangtails. Some of the techniques with the highest effectiveness ranking were not commonly used. For example, bangtails have been ranked consistently as very effective, yet only 15% of all utilities reported using this technique. In 2006, programs employed an average of six of the marketing strategies listed in the questionnaire, while the top performers reported an average of seven. **Table 24** presents information on the number of marketing techniques used by utilities. Four utilities used “other” marketing techniques not listed in our survey. Three of them used “face-to-face” or “one-on-one” meetings with clients to promote the green power program. Such techniques received mixed effectiveness ratings.

Compared to all programs, the top performers used more tactics, including direct mail, direct sales, partnerships with environmental organizations, bangtails, television ads, retail partnerships, and telemarketing. Their larger marketing budgets may account for this (see **Table 18**).

<sup>21</sup> In 2003, the “events” category was not listed as a specific option in the survey, but was listed under the “other” category by some respondents. The 2002 and 2004 surveys both included “events” as a category, and can therefore be compared with each other.

<sup>22</sup> Lieberman (2002) reviewed marketing data for public utilities with similar findings, except that direct mail was ranked higher.

**Table 24. Marketing Techniques Used by Utilities**

	Percent of Utilities Using Technique				Percent Top Performers Using Technique**			Average Usefulness Rank^			
	2003	2004	2005	2006	2004	2005	2006	2005		2006	
								All	Top	All	Top
Utility newsletter	81%	78%	74%	78%	73%	81%	83%	2.9	2.8	3.1	3
Bill inserts	83%	74%	66%	72%	73%	75%	75%	3.5	3.7	3.8	3.6
Events	24%*	74%	60%	68%	73%	81%	63%	2.5	2.5	2.7	2.7
Publicity	64%	56%	57%	52%	69%	63%	54%	3.1	3.1	3.1	3
Web marketing^	n/a	56%	54%	52%	73%	63%	50%	2.7	3.2	2.9	2.9
Newspaper ads	53%	36%	42%	49%	46%	50%	50%	2.2	2.4	2.3	2
Direct sales^	n/a	38%	36%	34%	50%	63%	42%	3.4	3.5	3	3
Direct mail	48%	35%	34%	39%	62%	63%	54%	3.2	3.7	3.8	4.1
Radio ads	45%	22%	27%	33%	19%	25%	25%	2.4	2.3	2.3	2
Bangtails	n/a	n/a	16%	15%	n/a	38%	33%	3.9	4.5	3.9	4.3
Partner with environmental organizations^^	n/a	26%	16%	29%	54%	38%	42%	2.9	2.7	2.8	3
Retail partners^	n/a	11%	13%	20%	23%	31%	21%	2.5	2.2	2.8	2.2
Television ads	22%	15%	10%	12%	31%	31%	17%	1.5	1.8	2.6	2.5
Billboards	7%	8%	7%	6%	12%	13%	8%	1.7	1.5	2.5	4
Community challenges^	n/a	7%	5%	13%	19%	13%	25%	3.8	3.5	2.8	3
Kiosks^	n/a	7%	5%	7%	4%	0	0	1.1	0	2.6	0
Other	41%	19%	5%	5%	46%	6%	0	1.8	2.7	3.7	0
Telemarketing	14%	6%	4%	2%	12%	19%	5%	2.8	3.7	2	1
Door -to-door^^^	n/a	n/a	2%	7%	n/a	6%	25%	3.3	5	2.8	3

\*Note: "Events" was listed as a specific option in the 2002, 2004, 2005 questionnaire, while in 2003 respondents were able to write it in under "Other."

\*\*Top performers are defined as utilities that make the top 10 lists for participants, sales, or participation rate. In 2005 and 2006, 16 and 24 top programs responded to this question, respectively.

^ Ranking system is 1-5 with 5 being the most useful marketing technique. Ranking system only included in 2004.

^^New category in 2004

^^^New category in 2005

60 programs provided responses to the question in 2002, 58 responded in 2003, 88 in 2004, 91 in 2005, and 85 in 2006.

## Program Implementation

### Enrollment Options

Utilities reported that the most commonly used methods for enrolling customers in green pricing programs include: using the utility’s Web site, phoning through the utility’s call center, returning mail-in cards, and signing up during special events (**Table 25**). Only 7% of utilities allowed customers to enroll by checking a box on their utility bills.

**Table 25. Methods of Enrolling in Green Pricing Programs**

	% Using Method				2006 Top Performers % Using Method	Average Rank 1 to 5, 5=highest
	2003	2004	2005	2006		
Utility Web site	83%	80%	85%	84%	96%	2.9
Phone (utility call center)	87%	84%	84%	80%	84%	2.9
Returning mail-in card	85%	83%	81%	72%	88%	3.9
Enroll at special events	85%	73%	75%	75%	80%	2.2
Other	31%	48%	24%	16%	36%	3.8
Check-box on utility bill	12%	15%	13%	7%	12%	2.3

Note: The number of respondents was 62 in 2002, 59 in 2003, 88 in 2004, 91 in 2005, and 86 in 2006. Twenty-five top performers responded to this question in 2006.

The most common methods are not necessarily the most effective; they may be commonly used because they are easy and inexpensive. Mail-in cards had the highest effectiveness rating of 3.9 (out of 5). As a group, “other” methods (which respondents were asked to list) was the only additional method receiving an average score greater than 3. Some of the enrollment options listed under “other” included bill inserts, direct sales through account representatives (both residential and commercial), phone marketing by a contractor, community challenges, and enrolling customers through retail partners or at the utility itself. On average, utilities offered three of the six enrollment options listed in the questionnaire.

### Enrollment Term

Roughly one-third of utilities require residential and nonresidential customers to subscribe to green pricing programs for a minimum period of time. One year is by far the most common minimum enrollment period, with requirements ranging from three months to 10 years. In some cases, utilities require nonresidential customers to enroll for longer periods of time than residential customers. Only five residential and six nonresidential programs had minimum enrollment terms of more than one year in length. Anecdotal evidence suggests that few programs actually enforce these minimum periods, with the exception of fixed-rate contracts.

## Program Evaluations and Market Research

Forty-two utilities (51%) reported that they had conducted customer research to aid in the design of their green pricing program or to develop a marketing plan. Of the 42 utilities, 26 had conducted market research over the course of several years. The remaining 16 utilities conducted market research only once, with some dating back to 1999. The types of research included: consumer surveys conducted by phone, mail, in-person (focus groups), customer profiling, and demographics; research to test the effectiveness of marketing messages or strategies; and research to determine customer satisfaction. Significantly, of the responding top-performing programs (25), 80% reported conducting market research in the past several years.

Thirty-three respondents (40%) indicated that they had performed a program evaluation, with most evaluations occurring in the past five years. Only five of the programs reported evaluating their programs constantly, annually, or biannually. Among the aspects evaluated, utilities most often listed: program effectiveness, pricing structure, and benchmarking. Of the top-performing programs, 64% reported conducting one or more program evaluations, compared to 40% for all programs.

### **Customer Value**

Response to utility green pricing programs can be improved by offering additional benefits (Wiser et al. 2004). For example, customers may be more willing to participate in a program if their participation is recognized or rewarded, or if they receive other products and services, such as compact fluorescent light bulbs or store discounts. In analyzing the 2006 data, we found that utilities that offered more tangible benefits indeed had higher participation rates.<sup>23</sup>

**Table 26** indicates the percentage of utilities that provide additional benefits to customers, based on a list of options included in the 2002-2006 questionnaires. Of the 12 options listed, respondents indicated that they offered an average of four additional benefits to their green pricing customers. The most common added benefits in 2006 were 1) to inform customers about the status of the program through newsletters that provide periodic program updates, 2) to offer a welcome kit to new participants, 3) to recognize business customers through ads in local media, 4) to provide decals that can be displayed in windows, and 5) to recognize participants with plaques or other items. The fraction of utilities offering tours to renewable energy facilities, renewable energy systems on school buildings, or renewable energy education programs showed a slight increase in 2006 after trending downward during the previous few years. A relatively small fraction of utilities offer discounts or promotions at local businesses, protection from fuel cost increases, or exemption from environmental fees (e.g., fees designated for installing emission-control equipment at fossil fuel plants).

As in previous years, the top-performing programs were more likely to offer a number of the benefits listed in **Table 26**. For example, 28% of the top performers offered participants discounts at local businesses, compared to about 13% of all programs. The top performers were

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<sup>23</sup> In conducting a bivariate analysis, we found positive correlation between the participation rate and the number of tangible benefits offered to consumers. The Pearson correlation coefficient was 0.305 and was statistically significant at the .05 level.

also more likely to protect customers from fuel cost increases. Overall, top performers reported providing an average of more than five of the benefits listed, compared to an average of four for all programs.

**Table 26. Methods of Providing Additional Program Benefits**

	% Using Method					Top Performers 2006 % Using Method
	2002	2003	2004	2005	2006	
Newsletters that provide program updates	62%	64%	61%	62%	68%	76%
Welcome kit	n/a	n/a	n/a	n/a	62%	68%
Recognition of business customers in program ads or local media	44%	51%	49%	46%	57%	56%
Decals for display in store windows	59%	56%	49%	54%	52%	56%
Plaques or other items for recognition	40%	49%	51%	44%	49%	48%
Installations on schools/renewable energy education programs	30%	25%	19%	30%	37%	36%
Tours to renewable energy project sites	35%	29%	23%	25%	28%	32%
Compact fluorescents or efficiency products	22%	12%	15%	15%	27%	20%
Discounts or promotions at local businesses	8%	12%	12%	15%	13%	28%
Protection from fuel-cost increases	11%	10%	9%	15%	12%	28%
Other	5%	12%	16%	16%	9%	8%
Exemption from environmental fees	2%	2%	1%	2%	2%	8%

Note: 59 programs answered this question in 2003, 89 programs in 2004, 91 in 2005, and 82 in 2006.

\*Top performers are defined as utilities ranked among the top 10 for participants, sales, or participation rate. Of the top performers in 2006, 21 responded to this question.

## Conclusions and Observations

At the end of 2006, more than 750 utilities—including many small municipal and cooperative utilities—offered green pricing programs to more than 70 million customers nationally. About 25% of all utilities nationwide now offer a green pricing option.

Collectively, utilities sold nearly 4 billion kilowatt-hours (kWh) of green power to more than 560,000 customers in 2006. In traditionally regulated electricity markets, sales of renewable energy through utility green pricing programs grew by about 40% to 3.4 billion kWh in 2006, following annual growth rates ranging from about 30% to 55% in the past four years. The current increase in sales resulted from both an increase in customer participants as well as larger purchases by customers. However, green pricing sales still represent a very small fraction of total utility electricity sales, with an average below 1%—although some utilities have achieved sales penetration rates of as much as 5%.

Both the number of customers and the volume of renewable energy sales grew somewhat faster for programs offered in restructured markets than it did for those in regulated markets, but the growth in restructured programs slowed in 2006 compared with the previous years, perhaps because they were benefiting from being relatively new in the past.

The number of customers participating in utility green pricing programs increased by about 20% in 2006, a slower pace than sales by volume. The number of nonresidential participants increased at nearly twice the rate of residential customers, as was the case in 2005. Customer-attribution rates fell to a median of 4% in 2006, similar to 2005, but lower than rates seen in previous years. Although the reason for the recent annual improvement in customer retention is not clear, it does suggest that green power customers are “sticky” in the face of increases in the cost of electricity, which have occurred in recent years.

As in previous years, a relatively small number of utility green power programs continue to dominate sales and participation figures. The top 10 programs accounted for about 70% of green power sales and 60% of customer participants, consistent with figures from previous years. In addition, programs marketed with third-party marketers had higher participation rates and renewable energy sales rates than programs marketed solely by a utility.

Average participation rates in green pricing programs have remained relatively flat over time, climbing slightly to 1.8% in 2006. Participation rates among the 10 most successful programs continue to be substantially higher than average, ranging from between about 5% and 17% in 2006 with most clustered from 5% to 6%. Higher levels of spending among these programs suggest that high participation rates are possible with dedicated marketing and outreach campaigns or for programs that offer superior value propositions.

The price premiums charged for green power continued on a downward trend in 2006. The average premium has fallen from 2.93¢/kWh in 2001 to 2.12¢/kWh in 2006, while the median premium fell from 2.5¢/kWh to 1.78¢/kWh during the same period. One program that exempts participants from fossil fuel cost changes offered green power at rates below standard electricity

prices during 2006, while several others offered green power at a very slight premium of less than 0.5¢/kWh.

Utilities reported a median cost of \$30 for acquiring new residential customers, similar to costs reported in previous years. Marketing expenditures generally vary with utility size, but there is wide variation in expenditures among the largest utilities. On average, the top-performing programs spend a greater amount on marketing and represent a majority of the top marketing spenders. Thus, the level of marketing expenditures appears to be important to program growth.

Response to utility green pricing programs can be improved by offering tangible benefits to both residential and nonresidential customers. These benefits include customer recognition, protection from fuel price increases, store discounts, and compact fluorescent light bulbs giveaways. The top performers offer a larger number of added benefits than other utilities and this appears to be a contributor to program success.

Compared to all programs, the top performers more commonly used direct mail, direct sales, partnerships with environmental organizations, bangtails, television ads, and community challenges. Consistent with findings from previous years, the techniques that received high effectiveness scores are not necessarily the most commonly used. In general, utilities may benefit from diversifying their marketing activities to include some of the more effective strategies.

At the end of 2006, green pricing programs were supporting the equivalent of more than 1,000 MW of new renewable energy capacity. Thus, green pricing continues to be a viable strategy for supporting new renewable energy sources. Nevertheless, current success can still be attributed to a relatively small number of programs. Continued industry growth will depend largely on the introduction of new programs and the extent to which the practices and the success of the top-performing programs can be emulated by other utilities.

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## Appendix A

### *Utility Green Power Program Questionnaire (2006 Data)*

**Instructions** – Please fill out a different form for each green power program offered. Please enter data for calendar year 2006.

*Confidentiality* – Individual utility responses to this survey regarding customers, sales, and marketing information will be held confidential. Data are used to prepare NREL’s list of top ten utility green power programs and to provide aggregate industry data to the U.S. DOE and the general public.

*1. Program and Contact Information*

a. Utility name	
b. Name of Green Power Program	
c. Name of respondent	
d. Phone of respondent	
e. email of respondent	
f. Year of program launch	
g. States in which program is offered	
<i>h. Name of third-party that helps market the program, if any</i>	
<i>i. Certifying organization, if certified (e.g., Green-e, ERT)</i>	

*2. Participation. In the table below, please provide participation data as of December 31, 2006. If data are provided for a different time period, please indicate here:*

a. Total number of residential green power participants					
b. Total number of non-residential green power participants					
c. Number of new residential green power participants in 2006 (do not subtract dropouts)					
d. Number of new non-residential green power participants in 2006 (do not subtract dropouts)					
e. Total number of residential customers (or members) eligible to participate					
f. Total number of non-residential customers (or members) eligible to participate					
g. Is the program currently open to new customers? Please check:	<table border="1" style="width: 100%;"> <tr> <td style="width: 80%;">Yes</td> <td></td> </tr> <tr> <td>No</td> <td></td> </tr> </table>	Yes		No	
Yes					
No					
h. Number of customers on waiting list					
i. Number of participants who have dropped out of the program this year					
j. Minimum period of time residential customers must participate (e.g., 1 year)					
k. Minimum period of time non-residential customers must participate (e.g., 2 years)					
l. Did you actively promote your green pricing program in 2006? Please check:	<table border="1" style="width: 100%;"> <tr> <td style="width: 80%;">Yes</td> <td></td> </tr> <tr> <td>No</td> <td></td> </tr> </table>	Yes		No	
Yes					
No					
m. Renewable Energy Mandates. Does your utility count the green power sold to customers through your green pricing program toward compliance with a state-imposed renewable portfolio standard? Please check:	<table border="1" style="width: 100%;"> <tr> <td style="width: 80%;">Yes</td> <td></td> </tr> <tr> <td>No</td> <td></td> </tr> </table>	Yes		No	
Yes					
No					

**3. Programs Offered Through Distribution Utilities.** For programs that are offered through multiple distribution cooperatives or municipal utilities, please list the number of distribution utilities that offer the program. In addition, list any utilities that have achieved participation rates of 4% or higher. Please add more space, if necessary.

Programs Offered Through Distribution Utilities	Response
a. Number of distribution utilities that offer the green power program	
b. Please list any utilities with >4% participation rate and indicate the utility's participation rate:	

**4. Pricing.** Please indicate the price premium as of the end of 2006.

Customer Type	Price premium for green power (£/kWh)	Description of Premium (e.g., \$1/100 kWh)	Are green power participants exempt from fuel charge? Y/N	If yes, what was fuel charge in Dec 2006? (£/kWh)	Change in Premium in 2006? Y/N* (explain below)	Minimum green power purchase (e.g. 25% of usage or 100 kWh)
a. Residential						
b. Non-Residential						
*If there was a change in the price premium during 2006 or if you anticipate a price premium change in 2007, please explain.						

**5. Renewable Energy Sales for 2006.** In the table below, please indicate the total annual sales of green power to customers during 2006. If sales are reported for a period other than January through December 2006, please indicate the number of months for which data are provided.

Green power sales for 2006	Total Annual Sales in 2006 ( kWh)
a. Green power sales to residential customers	
b. Green power sales to non-residential customers	
c. Total retail electricity sales to eligible residential customers	
d. Total retail electricity sales to eligible non-residential customers	
e. Number of months of sales data provided	

**6a. Program Sales by Renewable Resource.** In the table below, please indicate the percentage of green power sold through your program in 2006 from each of the following renewable resources. Please do not include renewables that are part of your utility's overall resource mix, if they are not used to supply participants in the green power program.

Resource	Percent of green power program sales by resource type
Landfill Gas	%
Other Biomass	%
Geothermal	%
Hydroelectric	%
Solar	%
Wind	%
Total	100%

**6b. Use of New Renewable Resources.** Please indicate the percentage of green power sold through your program in 2006 that was sourced from renewable energy systems that were built or repowered after January 1, 1997 (defined here as new). For example, if you sold 1,000 MWh of landfill gas through your program in 2006 and 500 MWh were derived from facilities built after Jan 1, 1997, then you would indicate 50% after landfill gas in the table below.

Resource	Percent of green power sales sourced from systems built or repowered after January 1, 1997 (defined here as new)
Landfill Gas	%
Other Biomass	%
Geothermal	%
Hydroelectric	%
Solar	%
Wind	%
Total	May not total 100%

**7. Renewable Energy Supplies.** Of the renewable energy used to supply your program, what percentage came from the following?

Renewable Energy Supplies	Percent
a. Renewable projects owned or partially-owned by your utility	%
b. Renewable electricity purchases from other suppliers/producers	%
c. Renewable electricity produced by utility customers (e.g. PV)	%
d. Renewable energy certificate (REC) purchases	%
Total	100%

**8. Program Research.** Have you performed (in 2006 or earlier) market research to aid in the design of your green power program or have you performed a program evaluation?

Research Category	Did you Perform? Please check Y/N	In what year(s) was research performed?	Type of Research or Evaluation Performed
a. Market Research	Yes		
	No		
b. Program Evaluation	Yes		
	No		

**9. Customer Enrollment.** In which ways can customers sign up for your program? Check all that apply. Also, please rate the effectiveness of each method on a scale of 1 to 5, with 5 being the most effective in terms of number of customers choosing this option

	Check All that Apply	Effectiveness Rating (1-5 scale, 5 =most effective)
a. Utility Web site		
b. By returning a mail-in card/bangtail		
c. Checking a box on their electric bill		
d. Sign up at special events		
e. By phone through the utility call center		
Other (list here and rate effectiveness):		

**10. Value-Added Products.** What other value-added products or services do you provide to customers through your green power program? Check all that apply.

Value-Added Products	Check All that Apply
a. Compact fluorescents or efficiency products	
b. Recognition of business customers in program ads or local media	
c. Discounts or promotions at local businesses	
d. Newsletters that provide program updates	
e. Tours to renewable energy project sites	
f. Welcome Kit/Thank you letter	
g. Decals for display in store windows	
h. Education programs/school installations	
i. Plaques, certificates or other recognition	
j. Protection from fuel cost increases	
k. Exemption from environmental fees	
l. Other (list here):	

**11a. Marketing and Administration Spending.** Please indicate below how much you spend annually on marketing and administration of your green power program. Check the appropriate boxes below. Please note: **Marketing** costs include all spending associated with advertising, promoting, and selling the product including labor directly in support of those efforts. **Administrative** costs include (labor and non-labor) costs associated with customer service, transactions, billing, training, managing inventories, reporting, and legal/regulatory reviews, etc.

Please check one box in each column.		
	Marketing Costs	Administrative Costs
\$0		
\$1-\$9,999		
\$10,000-\$49,999		
\$50,000-\$99,999		
\$100,000-\$199,999		
\$200,000-\$299,999		
\$300,000-\$399,999		
\$400,000-\$499,999		
\$500,000 or more		
If you are able to provide us with actual costs, please indicate here:	\$	\$

**12. Distribution of Costs.**

What percentage of your green power premium was attributable to marketing and administrative costs in 2006?	%	
Are all program costs borne by program participants? Check one.	Yes	
	No	
If no, please explain		
On average, how much did you spend in 2006 to sign up each new <b>residential</b> customer (\$/customer)? Please include only marketing costs, not administrative costs.	\$	

**13. Marketing Strategies.** In the table below, please indicate which marketing strategies you used for your power program in 2006. Check all that apply. Also, please rate the cost-effectiveness of those strategies utilized based on a scale of 1 to 5, with 5 being the most cost-effective.

Marketing Strategies	Check All That Apply	Cost Effectiveness Rating (1-5 scale, 5 =most cost effective)
a. Bill inserts		
b. Television		
c. Telemarketing		
d. Direct mail		
e. Radio		
f. Billboards		
g. Utility newsletter		
h. Bangtails		
i. Newspaper/other print ads		
j. Publicity/feature stories (non-paid)		
k. Events/Presenting to groups		
l. Community challenges		
m. Partner with environmental organizations		
n. Retail partners (co-branding)		
o. Web-based marketing		
p. Direct sales to commercial accts.		
q. Door-to-door sales to residential		
r. Kiosks		
Other (list here and rate effectiveness):		

Thank you for taking the time to complete the survey. Please email or fax this questionnaire by **Tuesday, February 20, 2007**, to: Gail Mosey, [gail\\_mosey@nrel.gov](mailto:gail_mosey@nrel.gov), fax (303) 384-7449. If you have any questions, please call Gail Mosey at (303) 384-7356.

## Appendix B

**Table B-1. Utilities Offering Green Pricing Programs in Regulated Markets (2006)**

<b>Investor-Owned Utilities</b>	Dakota Electric Association	Eugene Water & Electric Board
Alabama Power Company	Delaware Electric Cooperative	Fort Collins Utilities
Alliant Energy	Deseret Power	Gainesville Regional Utilities
AmerenUE	East Kentucky Power Cooperative*	Grant County PUD
Arizona Public Service	Farmers Electric Cooperative	Grays Harbor PUD
Avista Utilities	Georgia Electric Membership Corporation*	Heartland Consumers Power District
Central Vermont Public Service	Golden Valley Electric Association	Iowa Association of Municipal Utilities*
Cheyenne Light, Fuel and Power Company	Great River Energy*	Keys Energy Services
Connecticut Light and Power	Gunnison County Electric Association	Lakeland Electric
Consumers Energy	Holy Cross Energy	Lansing Board of Water and Light
Dominion North Carolina Power	Hoosier Energy*	Lenox Municipal Utilities
DTE Energy	Intermountain Rural Electric Association	Lewis County PUD
Duke Energy	KAMO Electric Cooperative	Lincoln Electric System
El Paso Electric Company	Kauai Island Utility Cooperative (KIUC)	Lodi Utilities
Entergy Gulf States	La Plata Electric Association	Longmont Power & Communications
Florida Power & Light Company	Lower Colorado River Authority	Los Alamos County (NM)
Georgia Power	Lower Valley Energy	Los Angeles Department of Water and Power
Green Mountain Power	Midstate Electric Cooperative	Loveland Water & Power
Gulf Power Company	Minnkota Power Cooperative*	Mason County PUD No. 3
Hawaiian Electric Company	New-Mac Electric Cooperative	Missouri Joint Municipal Electric Utility
Idaho Power Company	Orcas Power & Light	Missouri River Energy Services*
Indianapolis Power & Light Company	Oregon Trail Electric Cooperative	Moorhead Public Service
Kansas City Power & Light	Park Electric Cooperative	Muscatine Power and Water
Kentucky Utilities Company	Pedernales Electric Cooperative	City of Naperville
Louisville Gas and Electric Company	Peninsula Light Company	City of New Smyrna Beach
Madison Gas & Electric	PNGC Power*	Northern Wasco County PUD
MidAmerican Energy	Southern Montana Electric G&T Cooperative	Oklahoma Municipal Power Authority
Minnesota Power	Tri-State Generation and Transmission Association*	Omaha Public Power District
Nevada Power	Vigilante Electric Cooperative	Owatonna Public Utilities
NorthWestern Energy	Wabash Valley Power Association*	Pacific County PUD
NSTAR Electric	Western Farmers Electric Cooperative	City of Palo Alto Utilities
OG&E Electric Services	Yampa Valley Electric Association	Pasadena Water & Power
Otter Tail Power Company		Platte River Power Authority*
Pacific Gas and Electric Company		Rochester Public Utilities (MN)
PacifiCorp		Roseville Electric
Portland General Electric Company	<b>Federal</b>	Sacramento Municipal Utility District
Progress Energy Carolinas	Tennessee Valley Authority*	Salt River Project
Public Service Company of New Mexico		Santee Cooper
Puget Sound Energy	<b>Municipal/Public Utilities</b>	Seattle City Light
Savannah Electric	City of Alameda	Shrewsbury Electric and Cable Operations
Tampa Electric Company	American Municipal Power-Ohio	Silicon Valley Power
Tucson Electric Power Company	Anaheim Public Utilities	Snohomish County Public Utility District
UniSource Energy Services	City of Ashland	Southern Minnesota Municipal Power Agency*
United Illuminating	Austin Energy	City Utilities of Springfield (MO)
Upper Peninsula Power Company	Austin Utilities (MN)	City of St. Charles
Vectren Energy Delivery of Indiana	Benton County Public Utility District	City of St. George
We Energies	City of Bowling Green	Tacoma Power
Wisconsin Public Service Corporation	Burbank Water and Power	City of Tallahassee
Xcel Energy	Cedar Falls Utilities	Traverse City Light & Power
	Central Minnesota Municipal Power Agency	Waverly Light and Power
	Chelan County Public Utility District	Wisconsin Public Power Inc.*
<b>Electric Cooperatives</b>	Clallam County PUD	
Alabama Electric Cooperative	Clark Public Utilities	
Associated Electric Cooperative, Inc.	Colorado Springs Utilities	
Bandera Electric Cooperative	Columbia River PUD	
Basin Electric Power Cooperative*	Concord Municipal Light Plant	
Boone Electric Cooperative	Cowlitz PUD	
Buckeye Power	CPS Energy (San Antonio)	
CCS/Soyland	Edmond Electric	
Central Electric Cooperative	City of Eldridge (IA)	
Central Iowa Power Cooperative	ElectriCities	
Corn Belt Power Cooperatives	Emerald People's Utility District	
Dairyland Power Cooperative*	Estes Park Light & Power	

\*denotes programs offered through multiple utilities or distribution cooperatives

**Table B-2. Utility/Marketer Green Power Programs in Restructured Electricity Markets (2006)**

Consumers Energy  
Connecticut Light & Power  
JP&L  
Long Island Power Authority  
National Grid (Massachusetts Electric, Nantucket  
Electric, Narragansett Electric, Niagara Mohawk)  
NYSEG  
Rochester Gas and Electric  
PECO Energy  
PSE&G  
United Illuminating



## Appendix C

**Table C-1. Green Pricing Program Renewable Energy Sales  
 (as of December 2006)**

Rank	Utility	Resources Used	Sales (kWh/year)	Sales (aMW) <sup>a</sup>
1	Austin Energy	Wind, landfill gas	580,580,401	66.3
2	Portland General Electric <sup>b</sup>	Existing geothermal and hydro, wind	432,826,408	49.4
3	Florida Power & Light	Landfill gas, biomass, wind, solar	302,792,000	34.6
4	PacifiCorp <sup>cd</sup>	Wind, biomass, solar	299,862,690	34.2
5	Xcel Energy <sup>ef</sup>	Wind	236,505,718	27.0
6	Basin Electric Power Cooperative	Wind	217,427,000	24.8
7	Sacramento Municipal Utility District <sup>e</sup>	Wind, landfill gas, small hydro	216,476,278	24.7
8	National Grid <sup>ghi</sup>	Biomass, wind, small hydro, solar	156,447,869	17.9
9	OG&E Electric Services	Wind	134,553,920	15.4
10	Puget Sound Energy	Wind, solar, biogas	131,742,000	15.0

<sup>a</sup> An "average megawatt" (aMW) is a measure of continuous capacity equivalent (i.e., operating at a 100% capacity factor).

<sup>b</sup> Some products marketed in partnership with Green Mountain Energy Company.

<sup>c</sup> Includes Pacific Power and Rocky Mountain Power.

<sup>d</sup> Some Oregon products marketed in partnership with 3 Phases Energy Services.

<sup>e</sup> Product is Green-e certified. For Xcel Energy, the Colorado and Minnesota Windsource products are Green-e certified.

<sup>f</sup> Includes Northern States Power, Public Service Company of Colorado, and Southwestern Public Service.

<sup>g</sup> Includes Niagara Mohawk, Massachusetts Electric, Narragansett Electric, and Nantucket Electric.

<sup>h</sup> Marketed in partnership with Community Energy, EnviroGen, Green Mountain Energy Company, Mass Energy, People's Power & Light, and Sterling Planet.

<sup>i</sup> Some products are certified by Green-e or Environmental Resources Trust.

**Table C-2. Total Number of Customer Participants  
 (as of December 2006)**

Rank	Utility	Program(s)	Participants
1	Xcel Energy <sup>a</sup>	<i>Windsource<sup>b</sup> Renewable Energy Trust</i>	63,028
2	PacifiCorp <sup>cd</sup>	<i>Blue Sky Block Blue Sky Usage Blue Sky Habitat</i>	51,297
3	Portland General Electric <sup>e</sup>	<i>Clean Wind Green Source Healthy Habitat</i>	50,284
4	Sacramento Municipal Utility District	<i>Greenenergy<sup>b</sup></i>	35,307
5	PECO <sup>f</sup>	<i>PECO WIND</i>	34,303
6	Florida Power & Light <sup>g</sup>	<i>Sunshine Energy</i>	28,742
7	Los Angeles Department of Water and Power	<i>Green Power for a Green LA</i>	24,320
8	National Grid <sup>hi</sup>	<i>GreenUp<sup>j</sup></i>	23,751
9	Puget Sound Energy	<i>Green Power Program</i>	17,426
10	We Energies	<i>Energy for Tomorrow<sup>b</sup></i>	15,823

<sup>a</sup> Includes Northern States Power, Public Service Company of Colorado, and Southwestern Public Service.

<sup>b</sup> Product is *Green-e* certified ([www.green-e.org](http://www.green-e.org)). For Xcel Energy, only the Public Service Company of Colorado product is *Green-e* certified. For Alliant Energy, Iowa and Minnesota products are *Green-e* certified.

<sup>c</sup> Includes Pacific Power and Utah Power.

<sup>d</sup> Some Oregon products marketed in partnership with 3 Phases Energy Services.

<sup>e</sup> Some products marketed in partnership with Green Mountain Energy Company.

<sup>f</sup> Marketed in partnership with Community Energy Inc.

<sup>g</sup> Marketed in partnership with Green Mountain Energy Company.

<sup>h</sup> Includes Niagara Mohawk, Massachusetts Electric, Narragansett Electric, and Nantucket Electric.

<sup>i</sup> Marketed in partnership with Community Energy, EnviroGen, Green Mountain Energy Company, Mass Energy, People's Power & Light, and Sterling Planet.

<sup>j</sup> Some products are certified by Green-e ([www.green-e.org](http://www.green-e.org)) or Environmental Resources Trust (<http://www.ert.net>).

**Table C-3. Customer Participation Rate  
 (as of December 2006)**

<b>Rank</b>	<b>Utility</b>	<b>Customer Participation Rate</b>	<b>Program(s)</b>	<b>Program Start Year</b>
1	City of Palo Alto Utilities <sup>a</sup>	16.9%	<i>Palo Alto Green<sup>b</sup></i>	2003
2	Lenox Municipal Utilities <sup>c</sup>	16.6%	<i>Green City Energy</i>	2003
3	Montezuma Municipal Light & Power <sup>c</sup>	6.5%	<i>Green City Energy</i>	2003
3	Portland General Electric <sup>d</sup>	6.5%	<i>Clean Wind Green Source</i>	2002
5	Sacramento Municipal Utility District	6.2%	<i>Greenenergy<sup>b</sup></i>	1997
6	Silicon Valley Power <sup>a</sup>	6.1%	<i>Santa Clara Green Power</i>	2004
7	Holy Cross Energy	5.6%	<i>Wind Power Pioneers Local Renewable Energy Pool</i>	1998 2002
8	Central Electric Cooperative <sup>e</sup>	5.5%	<i>Green Power</i>	1999
9	River Falls Municipal Utilities <sup>f</sup>	5.4%	<i>Renewable Energy Program</i>	2001
10	Orcas Power and Light Cooperative	5.1%	<i>Go Green</i>	1997

<sup>a</sup> Marketed in partnership with 3 Phases Energy Services

<sup>b</sup> Product is Green-e certified.

<sup>c</sup> Program offered in association with the Iowa Association of Municipal Utilities

<sup>d</sup> Some products marketed in partnership with Green Mountain Energy Company.

<sup>e</sup> Power supplied by PNGC Power.

<sup>f</sup> Power supplied by Wisconsin Public Power Inc.

**Table C-4. Price Premium Charged for New, Customer-Driven Renewable Power<sup>a</sup>  
 (as of December 2006)**

<b>Rank</b>	<b>Utility</b>	<b>Resources Used</b>	<b>Premium (¢/kWh)</b>
1	Austin Energy <sup>b</sup>	<i>Wind, landfill gas</i>	-0.13
2	OG&E Electric Services <sup>b</sup>	<i>Wind</i>	0.026
3	Edmond Electric <sup>bc</sup>	<i>Wind</i>	0.144
4	Avista Utilities	<i>Wind, landfill gas, biomass</i>	0.33
5	Indianapolis Power and Light	<i>Wind</i>	0.35
6	Eugene Water and Electric Board <sup>bd</sup>	<i>Wind</i>	0.65
7	Clallam County Public Utility District <sup>b</sup>	<i>Landfill gas</i>	0.70
8	PacifiCorp <sup>c</sup>	<i>Wind, biomass, solar</i>	0.78
9	Idaho Power	<i>Wind, solar</i>	0.882
10	Mason County PUD 3	<i>Wind</i>	1.0
10	Sacramento Municipal Utility District <sup>d</sup>	<i>Wind, landfill gas, hydro</i>	1.0
10	Wisconsin Public Service Corporation	<i>Wind, landfill gas, biomass</i>	1.0

<sup>a</sup> Includes only programs that have installed or announced firm plans to install or purchase power from 100% new renewable resources.

<sup>b</sup> Premium is variable, customers in these programs are exempt or otherwise protected from changes in utility fuel charges.

<sup>c</sup> Power supplied by Oklahoma Municipal Power Authority.

<sup>d</sup> Product is *Green-e* certified.

<sup>e</sup> Pacific Power *Blue Sky Usage* product, only available in Oregon. Product marketed in partnership with 3 Phases Energy Services.

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