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Technical Report

Green Power Marketing in the United States: A Status Report

Seventh Edition

Lori Bird and Blair Swezey

National Renewable Energy Laboratory
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Operated for the U.S. Department of Energy
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An Overview of Green Power Marketing in the United States

Introduction

Voluntary consumer decisions to purchase electricity supplied by renewable energy sources represent a powerful market support mechanism for renewable energy development. Beginning in the early 1990s, a small number of U.S. utilities began offering "green power" options to their customers. Since then, these products have become more prevalent, both from utilities and in states that have introduced competition into their retail electricity markets. Today, more than 50% of all U.S. consumers have an option to purchase some type of green power product from a retail electricity provider.

Currently, about 15% of utilities offer green power programs to customers in 34 states. These programs allow customers to purchase some portion of their power supply—almost always at a higher price—as renewable energy or to contribute funds for the utility to invest in renewable energy development. The term "green pricing" is typically used to refer to these utility programs offered in noncompetitive electricity markets.

In some competitive (or restructured) retail electricity markets, electricity customers can purchase electricity generated from renewable sources by switching to an alternative electricity supplier that offers green power. To date, nearly a dozen states that have opened their markets to competition have experienced some degree of green power marketing activity.

Finally, any consumer can purchase green power through renewable energy certificates (RECs), which represent the unique or "green" attributes of electricity generated from renewable energy-based projects. Residential and nonresidential consumers can support renewable energy development through REC purchases regardless of whether they already have access to a green power product from their retail power provider and without having to switch to an alternative supplier. Today, more than 20 companies actively market RECs throughout the United States.

This report provides an overview of green power marketing activity in the United States. The first section provides an overview of green power markets, consumer response, and recent industry trends. The second section provides brief descriptions of utility green pricing programs. The third section describes companies that actively market green power in competitive markets and those that market renewable energy certificates nationally or regionally. The final section provides information on a select number of large, nonresidential green power purchasers, including businesses, universities, and government agencies.

Utility Green Pricing Programs

The number of utilities offering green pricing has grown steadily in recent years—today, more than 500 investor-owned, public, and cooperative utilities in 34 states offer green pricing programs (**Figure 1** and **Tables A-1, A-2**).[1] Because a number of small municipal or cooperative utilities offer programs developed by their power suppliers, the number of distinct green pricing programs is just more than 100. Since 1999, between 15 and 25 new programs have been added each year. Initially, part of the growth in utility green power offerings was attributable to the threat of retail market competition, while recent growth has been spurred by several states that have passed laws requiring utilities to offer green pricing.[2] In addition, utilities are becoming increasingly comfortable with the operational reliability and improved economics of renewable energy technologies, leading to a growing willingness to undertake projects. And a number of utilities have expanded their programs as customer demand has grown.

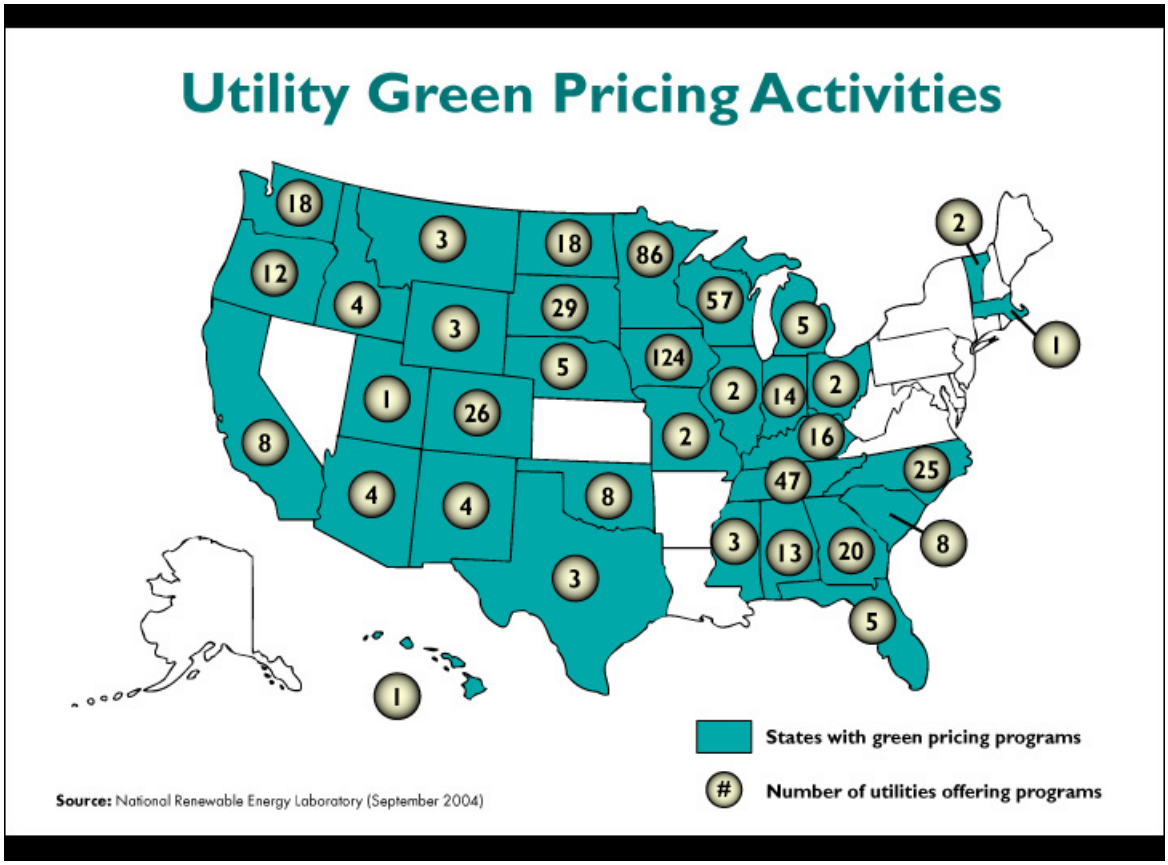

Figure 1: U.S. Map of Green Pricing Activities

[1] For an up-to-date list of utilities with green pricing programs, see the table of utility green pricing programs on the U.S. Department of Energy's Green Power Network Web site at http://www.eere.energy.gov/greenpower/summary.shtml.

[2] These states include Iowa, Minnesota, New Mexico, Oregon, and Washington.

Products and Pricing

Typically, green pricing programs are structured so that customers can either purchase green power for a certain percentage of their electricity use (often called percent-of-use products*)* or in discrete amounts or blocks at a fixed price (block products*)*, such as a 100-kilowatt-hour (kWh) block. Most utilities offer block products but may also allow customers to purchase green power for their entire monthly electricity use. Utilities that offer percent-of-use products generally allow residential customers to elect to purchase 25%, 50%, or 100% of their electricity use as renewable energy, while a few offer fractions as small as 10%. Larger purchasers, such as businesses, can often purchase green power for a smaller fraction of their electricity use.

The price premiums charged in green pricing programs range from 0.6¢/kWh to as much as 17.6¢/kWh, with a median of 2.0¢/kWh and a mean of 2.62¢/kWh (**Table 1**).[3] Programs that feature solar-only products represent the high end of the range. A handful of utilities offer volume discounts or lower premiums to nonresidential green power customers. The average price premium has dropped at an annual average rate of 9% since 2000, while the median premium declined by 20% in 2003 after remaining constant for several years. Some of this reduction can be attributed to lower-than-expected market costs for renewable energy supplies. Also, increases in the price of natural gas have narrowed the price gap between renewables and gas-fired generation alternatives. This has lead to lower starting premiums for new programs and reduced the effective green premiums in those utility programs under which participating customers are exempted from fuel-related price increases.

Table 1: Price Premiums Charged for Utility Green Pricing Products (¢/kWh)

	1999	2000	2001	2002	2003
Average Premium	2.15	3.48	2.93	2.82	2.62
Median Premium	2.00	2.50	2.50	2.50	2.00
Range of Premiums	0.4-5.0	(0.5)-20.0	0.9-17.6	0.7-17.6	0.6-17.6
10 Programs with Lowest Premiums*	0.4-2.5**	(0.5)-2.5	1.0-1.5	0.7-1.5	0.6-1.3
Number of Programs Represented	24	50	60	80	91

*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 fact that the program with the lowest premium (0.9¢/kWh) was not eligible for the Top 10 because it was either selling existing renewables or had not installed any new renewable capacity for its program.
**Data for April 2000.

Source: Bird and Cardinal (2004)

[3] It should be noted that a handful of utilities periodically adjust the green power premium to reflect changes in the cost of conventional generation sources. Thus, when the cost of the utility's generation mix rises, the effective green power premium falls.

Customer Participation

At the end of 2003, more than 265,000 customers were participating in utility green pricing programs nationwide, including about 6,500 nonresidential customers.[4] Between 1999 and 2003, the number of participating customers increased fourfold. **Table 2** shows the increase in customers delineated by residential and nonresidential customer segments. During 2003, the number of nonresidential customers participating in green pricing programs increased by 66%, which was more than four times the rate of growth of residential customers. This reflects the fact that utilities have been increasing their marketing efforts to nonresidential customers, as well as the smaller base of preexisting nonresidential customers. In addition, several nonutility promotional programs, such as the U.S. Environmental Protection Agency's (EPA) Green Power Partnership and regional educational efforts conducted by nonprofit organizations, have targeted the nonresidential sector.

Table 2: Estimated Cumulative Number of Customers Participating in Utility Green Pricing Programs

Customer Segment	1999	2000	2001	2002	2003
Residential	n/a*	131,000	166,300	224,500	258,700
Nonresidential	n/a*	1,700	2,500	3,900	6,500
Total	66,900	132,700	168,800	228,400	265,100

*Information on residential and nonresidential participants is not available for 1999.
Source: Bird and Cardinal (2004)

In 2003, customer participation rates in utility green pricing programs remained steady, with an average of 1.2% and a median of 0.9% across all programs (**Table 3**). The top programs showed greater improvement in participation rates, with average rates ranging from 4% to 11% in 2003, compared to 3% to 6% in 2002.[5] The lack of improvement among all programs results in part from a number of relatively inactive programs and the introduction of new programs each year. Bird and Cardinal (2004) report an average participation rate of 1.8% among programs that have been in existence for at least four years, suggesting that program duration—and perhaps sustained marketing efforts—affect market penetration rates.

[4] NREL received participant and sales data for about 70% of utility green pricing programs in 2003, including all of the major programs. The remaining programs, which are smaller in size, do not have a large impact on overall participant numbers. Annual program participant numbers have been adjusted downward from those previously reported in Bird and Swezey (2003) because of program participation revisions made by the Los Angeles Department of Water and Power.

[5] The high end of the range declined from 2000 to 2002 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. "Top 10" rankings of utility green pricing programs are posted on the U.S. Department of Energy's Green Power Network Web site at http://www.eere.energy.gov/greenpower/resources/tables/topten.shtml.

Other factors that limit participation rates include a lack of customer awareness of the green power program;[6] customer unwillingness to pay a premium for green power; customer uncertainty regarding the actual benefits of the program; varied levels of interest among utilities in marketing and promoting the program; and, in some cases, limited product availability—some utilities have been slow to expand a program when the initial amount of green power offered is fully subscribed. (Swezey and Bird, 2000; Swezey and Bird, 2001).

Table 3: Customer Participation Rates in Utility Green Pricing Programs by Year

	1999	2000	2001	2002	2003
Average	0.9%	1.2%	1.3%	1.2%	1.2%
Median	0.8%	0.7%	0.7%	0.8%	0.9%
Top 10 Programs	2.1%-4.7%*	2.6%-7.3%	3.0%-7.0%	3.0%-5.8%	3.9%-11.1%

*Data for April 2000
Source: Bird and Cardinal (2004)

Utility Green Power Sales

Collectively, utilities sold nearly 1.3 billion kWh of green power to customers in 2003 (**Table 4**). Green power sales to all customer classes increased by 44% in 2003, compared to 56% in 2002, and 26% in 2001. The growth in sales can be attributed to the larger number of customers purchasing green power—particularly new nonresidential customers—as well as larger purchases by customers.

At the end of 2003, about 520 MW of new renewables capacity had been installed as a result of utility green pricing programs, with another 170 MW planned (**Table 5**). Wind, solar, and landfill gas are the renewable resources most commonly used for utility programs, with wind energy representing the largest portion of the total capacity. (Bird and Swezey, 2004).

Table 4: Annual Sales of Green Energy through Utility Green Pricing Programs (millions of kWh)

	2000	2001	2002	2003
Residential customers	---	399.7	661.3	874.1
Nonresidential customers	---	172.8	233.7	410.3
All customers	453.7	572.5	895.0	1,284.4
% Nonresidential	---	30%	26%	32%

*Information on customer segments is not available for 2000.
Source: Bird and Cardinal (2004)

[6] A number of utilities have reported that only 20% to 30% of their customers are aware that a green power option is offered.

Table 5: New Renewable Energy Capacity Supplying Green Pricing Programs (2003)

Source	MW in Place	%	MW Planned	%
Wind	425.4	*81.7*	133.4	*78.6*
Biomass	75.7	*14.5*	10.0	*5.9*
Solar	4.9	*0.9*	1.3	*0.8*
Geothermal	5.5	*1.1*	25.0	*14.7*
Small Hydro	9.3	*1.8*	0.0	*0.0*
Total	520.8	*100.0*	169.7	*100.0*

Source: Bird and Swezey (2004)

Competitive Green Power Markets

About one-third of states have restructured their electricity markets to introduce retail service competition. Currently, electricity consumers in the following states can purchase competitively marketed green power: Maine, Maryland, Massachusetts, New Jersey, New York, Pennsylvania, Rhode Island, Texas, and Virginia, as well as the District of Columbia **(Figure 2** and **Table A-3)**.[7,8]

Initially, buying green power in competitive retail markets entailed switching service from the incumbent utility to a green power supplier. However, in most of these markets, alternative marketers have found it difficult to persuade customers to switch suppliers (Wiser, et al, 2001). More recently, states are now requiring default suppliers (which are often the incumbent distribution utilities) to offer green power options to their customers. These suppliers typically allow customers to choose among green power options offered by competing green power marketers. These programs are relatively new, and there is still too little experience to say whether they provide an effective strategy for marketing green power in restructured states, particularly to residential customers.

[7] For an up-to-date list of products offered by competitive green power marketers, see the U.S. Department of Energy's Green Power Network Web site at http://www.eere.energy.gov/greenpower/markets/marketing.shtml?page=1

[8] We do not include Oregon and Ohio in this list. In Oregon, only large commercial and industrial customers are able to switch to competitive green power providers; residential and small commercial customers have access to green power options offered by the incumbent utilities, which we categorize as green pricing in this report (see the green pricing section). In Ohio, at least one green power marketer supplies customers of municipal aggregation groups with a "cleaner energy" product but the renewable energy content is very low. Green power is not offered more broadly in the market.

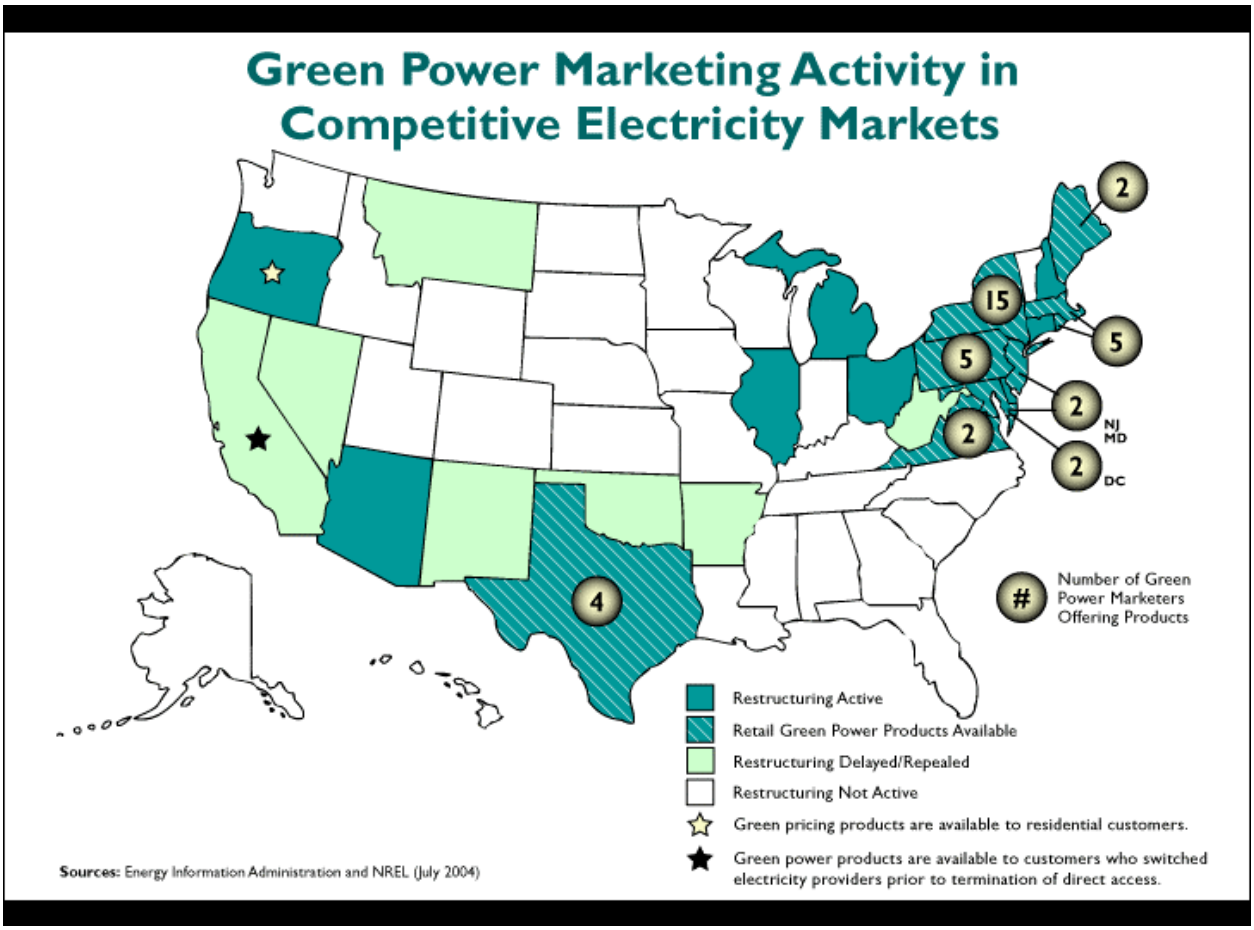

Figure 2: States with Competitive Green Power Offerings

Products and Pricing

The products offered in competitive markets tend to differ from those offered by utilities in that they may contain a mix of electricity generated from new and preexisting renewable energy projects; whereas, utilities generally use only new renewable energy supplies, competitive suppliers are more concerned about price competition, and existing resources are typically available at lower costs. Also, when markets initially opened to competition, competitive suppliers were forced to offer existing renewables in some regions because of a lack of new renewable energy supplies.

Competitively marketed green power products generally carry a price premium of between 1¢/kWh and 2¢/kWh, although offerings range from about 0.1¢/kWh to 5¢/kWh. The price premium charged depends on several factors such as the price of "standard offer" or default service, whether incentives are available to green power marketers or suppliers, and the cost of renewable energy generation available in the regional market. Some marketers charge prices very close to the default market price but also charge a monthly service fee; others offer fixed-price products, which provide customers with protection against increasing prices for a specified period of time, usually only one year.

Customer Participation

Based on data received from marketers, we estimate that 150,000 customers were purchasing green power from competitive suppliers at the end of 2003, primarily in the Northeast states and Texas. These figures include customers purchasing both certified and uncertified products, although they do not include customers purchasing products containing only a small fraction of renewable energy content.[9]

Trend information on green power marketing activity in competitive retail markets is available from the Center for Resource Solutions, which operates the *Green-e* certification and verification program. Recognizing that *Green-e* products represent only a subset of the market, **Table 6** presents annual totals of customers purchasing *Green-e* certified products.[10] Of the 61,000 customers tallied in 2003, about 60% were located in Texas and California;[11] with the remainder in: Maryland, Massachusetts, New Jersey, New York, Pennsylvania, and Washington, D.C.

Although the number of customers purchasing *Green-e* certified products nearly tripled from 1998 to 2000, the California power crisis caused the number to decline by 40% in 2001 as many green power marketers were forced to exit the market and return their customers to default service.[12] Another significant drop occurred in 2003 when California repealed subsidies for green power purchasers; however, other states saw gains at the same time. For example, the Northeast experienced a 50% increase in customers purchasing *Green-e* certified products during 2003.

Table 6: Cumulative Number of Customers Purchasing *Green-e* Certified Power

	1998	1999	2000	2001	2002	2003*
Residential	56,600	144,700	154,000	93,600	118,000	61,100
Nonresidential	5,800	27,700	8,600	13,400	8,000	480
Total	62,400	172,400	162,600	107,000	126,000	61,600

Sources: Center for Resource Solutions (1999; 2000; 2001; 2002; 2003)
*2003 data represent preliminary (unaudited) figures.

[9] For example, Green Mountain Energy Company serves approximately 400,000 customers in Ohio with a product blend that contains only 1% to 2% of renewable energy content.
[10] The *Green-e* program for competitively marketed green power products requires that products contain at least 50% renewable energy content. For more information on the *Green-e* program, see http://www.green-e.org/.
[11] The CRS figures include about 23,000 customers that participate in the green pricing program of the Sacramento Municipal Utility District, which is certified by *Green-e*. However, these customers are not included in our estimate of the 150,000 customers purchasing green power in competitive markets.
[12] The number of California customers purchasing *Green-e* certified products fell from about 155,000 in 1999 to 88,000 in 2001.

Green Power Sales

According to data received from marketers, an estimated 1.9 billion kWh of renewable energy was sold to retail customers in competitive electricity markets in 2003.[13] This includes renewable energy from both existing and new sources as well as that sold to customers in products that contain only a small percentage of renewable energy. Data are not available on sales by customer segment. However, the EPA Green Power Partnership reports that its nonresidential partners currently purchase about 440 million kWh in competitive markets, which represents nearly one-fourth of the total.

The Center for Resource Solutions reports sales of *Green-e* certified electricity, which again is a subset of the market (**Table 7**). According to unaudited figures released by *Green-e*, about 625 million kWh of renewable energy were sold to consumers through *Green-e* certified products in 2003. About 30% of the sales were to nonresidential customers, which is similar to the experience in regulated markets. Although sales of green power in the Northeast increased by about 75% during 2003, the loss of a large number of customers in California (as described earlier) is responsible for the overall decline in sales of more than 50% from 2002.

Table 7: Annual Sales of *Green-e* Certified Green Energy in Competitive Markets (millions of kWh)

	1998	1999	2000	2001	2002	2003*
Residential	303	761	1,125	741	1,135	439
Nonresidential	81	466	459	209	301	186
All Customers	384	1,227	1,584	950	1,436	625
New Renewables	n/a	n/a	n/a	251	926	n/a

Sources: Center for Resource Solutions (1999; 2000; 2001; 2002; 2003)
*2003 data represent preliminary (unaudited) figures.

The renewable energy sources most commonly used to supply competitive green power offerings are wind, landfill gas, and small or low-impact hydropower. A number of products also contain a small amount of solar energy. Early competitive-market product offerings were supplied primarily from existing renewable energy sources, but more recent product offerings contain higher fractions of new renewables. *Green-e* certification criteria require marketers to increase the percentage of new renewable content over time[14]—in 2002, 64% of the *Green-e* certified electricity was supplied from new renewable energy sources, up from only 26% in 2001. Higher-priced products often contain a larger fraction of new renewable energy content or more desirable resources, such as new wind and solar.

An estimated 1,130 MW of new renewables capacity is used to supply competitive green power markets, or is being sold as RECs (see RECs section below) in both retail and wholesale

[13] This includes green power sold to customers through default utility supplier programs.
[14] The definition of new renewable resources varies by region. See the *Green-e* standard for a more detailed discussion at http://www.green-e.org/ipp/standard_for_marketers.html

markets; wind energy is the predominant resource type (**Table 8**). More than 220 MW of additional renewables capacity is planned.

Table 8: New Renewables Capacity Supplying Competitive Markets and Renewable Energy Certificates (2003)

Source	MW in Place	%	MW Planned	%
Wind	1,119.2	*99.3*	173.3	*77.5*
Biomass	1.7	*0.1*	50.3	*22.5*
Solar	0.7	*0.1*	0.0	*0.0*
Geothermal	5.0	*0.4*	0.0	*0.0*
Small Hydro	0.0	*0.0*	0.0	*0.0*
Total	1,126.5	*100.0*	223.7	*100.0*

Source: Bird and Swezey (2004)

Competitive Market Summaries

Overall, the experience in competitive markets has been varied and highly dependent on state-specific market rules, standard offer prices, state policy support for renewable energy, and the cost of renewable generation sources available in the region. In 1998 and 1999, green power marketers were most successful in California and Pennsylvania, where as many as 1% to 2% of customers purchased green power. More recently, significant marketing activity has been concentrated in Texas, as well as Mid-Atlantic and New England states—including Maine, Maryland, Massachusetts, New Jersey, New York, Pennsylvania, Virginia, and the District of Columbia.

Texas is arguably the most viable competitive electricity market in the United States today, with significant switching by both residential and nonresidential customers. As of March 2004, approximately 1.3 million electricity customers had switched suppliers in the state, representing 14% of residential customers and 19% of nonresidential customers (Public Utility Commission of Texas, 2004).

Two competitive electricity providers (Green Mountain Energy Company and Reliant Energy) offer green power to retail customers in most parts of Texas. Green Mountain offers a 100% wind energy product, as well as fixed-rate and variable-rate products supplied from wind and hydropower. While the company's initial focus was on the residential sector, Green Mountain recently has targeted commercial and industrial customers as well. In conjunction with several other companies, Green Mountain developed a 160-MW wind project in west Texas to serve its customers. The other prominent retail marketer, Reliant Energy, offers a 100% renewable energy product, although it is not heavily promoted (Richardson, 2004). Several other suppliers serve large, nonresidential customers with wind energy. For example, TXU Energy is selling 78 million kWh of wind energy annually to Dyess Air Force Base under a two-year deal. According

to data released by the U.S. Energy Information Administration (EIA), about 40,000 customers were purchasing green power through a competitive supplier in Texas in 2002 (EIA, 2003).[15]

In the Mid-Atlantic and New England regions, most states have experienced limited customer switching. Early on, Pennsylvania experienced relatively heavy switching, but activity has since decreased. Customer switching peaked in the spring of 2001, when nearly 800,000 Pennsylvania customers had switched suppliers, but only about half that many are being served by competitive suppliers today (Pennsylvania Office of Consumer Advocate, 2004). The EIA reported that 92,000 customers in Pennsylvania were purchasing green power in 2002, which is equivalent to about 2% of all electricity customers in the state (EIA, 2003). However, this figure likely includes some 50,000 customers who are purchasing only a small amount of renewable energy through a state-mandated program.[16]

A smaller number of customers are purchasing green power in Maryland, New Jersey, New York, Virginia, Washington, D.C., and New England states. While customer numbers have experienced modest growth in these states, total sales of renewable energy have grown significantly as a result of large green power purchases by businesses, colleges and universities, government agencies, and other nonresidential customers. More than 200 MW of new wind energy capacity in Pennsylvania, West Virginia, and New York is being used to serve green power customers in the region, in the form of both RECs and bundled electricity products, primarily through deals negotiated by Community Energy and its partners.

Because of the difficulties in persuading customers to switch providers, some green power marketers are teaming with default utility suppliers to sell green power, particularly to residential customers. The first such program was launched in the fall of 2002 in the Niagara Mohawk service territory in upstate New York, and it has been adopted by other distribution utilities owned by National Grid in Massachusetts and Rhode Island. In addition, several other default utility suppliers in New York—such as NYSEG, the Long Island Power Authority, and Rochester Gas and Electric—are teaming with green power marketers to offer renewable energy options to their customers. PECO Energy launched a similar program in Pennsylvania in the summer of 2004. These programs are typically structured so that customers can purchase green power through a participating marketer, with the surcharge applied to the customer's regular utility bill. Some utilities offer a choice of products from several marketers, while others have teamed with a single marketer. Most of these programs are supplied with RECs, but customers essentially are receiving a bundled green power product through the utility.

Renewable Energy Certificate Markets

One alternative to both competitive and regulated green power offerings is RECs. Also known as "green tags" or tradable renewable certificates (TRCs), RECs represent the unique or "green" attributes of renewable energy generation and can be sold separately from the commodity

[15] EIA reported 47,638 green power customers in Texas, including 539 nonresidential customers. Adjusting this figure for customers participating in utility green pricing programs yields an estimated 40,000 customers purchasing green power through competitive suppliers.

[16] In an effort to encourage competition in the state, Green Mountain Energy Company won the right to serve 50,000 randomly selected PECO customers in 2001.

electricity. Thus, in competitive electricity markets, consumers can purchase RECs without having to switch to a new retail provider and utility customers also can purchase RECs separately from utility-supplied power, whether or not their utility offers a green power product. REC-based products may be supplied from a variety of renewable energy sources throughout the country and sold to customers nationally; or they may be supplied from renewable energy sources in a particular region or locality and marketed as such to local customers.

RECs are also sold in the wholesale market and are frequently used by utilities and marketers who bundle the RECs with commodity electricity to sell green power to retail customers. Thus, it can be difficult to distinguish REC products from other green power offerings. This is particularly true when REC products are supplied from renewable sources located in the same region in which they are marketed.

Products and Pricing

More than 20 companies market REC products to retail customers, with a handful marketing solely to commercial and industrial customers (**Table A-4**).[17] Similar to competitively marketed products, retail prices charged for certificate-based green power products typically range from about 1¢/kWh to 2.5¢/kWh for residential customers, while a few products are offered for as much as 4¢/kWh to 5¢/kWh—and one solar-only product is priced at 20¢/kWh. In many cases, larger customers are able to negotiate lower prices. Virtually all REC products are sourced from new renewable energy generation projects and about three-fourths of these are certified by *Green-e*, which is a much higher fraction than in the competitive retail markets.[18] The greater interest in being certified may stem from concerns over "double counting" or that RECs are generally not subject to regulatory scrutiny. Wind energy is the most commonly used renewable energy source, although some REC products blend other renewable energy sources, such as biomass (typically from bio-methane sources) and solar.

REC Sales in Voluntary Markets

According to data received from marketers, an estimated 5,000 retail customers currently purchase REC products nationwide and more than 650 million kWh of RECs were sold to retail customers in 2003. RECs sales are concentrated in the Mid-Atlantic and Northeast states where REC marketers tend to be most active.

REC purchases by businesses and other nonresidential customers represent a significant fraction of total sales. For example, according to unaudited figures released by the *Green-e* program for 2003, nonresidential customers represented 98% of the 340 million kWh of *Green-e* certified RECs sales (**Table 9**). Also, sales of *Green-e* certified RECs to nonresidential customers increased nearly fivefold in 2003, indicating the growing level of attraction that RECs hold for this market segment. In addition, the EPA Green Power Partnership reports that its nonresidential

[17] For an up-to-date list of companies offering certificate-based green power products, see the U.S. Department of Energy's Green Power Network Web site at: http://www.eere.energy.gov/greenpower/certif_summ.shtml.
[18] REC products are subject to a different *Green-e* standard than other competitively marketed products. See the full TRC Standard at http://www.green-e.org/pdf/trc_standard.pdf.

partners purchase nearly 540 million kWh of RECs annually, which represents about 80% of total estimated REC sales for 2003.

The greater interest in REC products among nonresidential customers can be explained, in part, by the cost savings that are realized by developing renewable energy projects in more favorable resource locations. It also may be attributable to the fact that the power need not be delivered directly to the customer, which lowers transaction costs. Business customers are also more amenable to purchasing green power that might be generated in a variety of areas if they operate facilities in multiple locations across the country.

Table 9: Number of Customers and Sales of *Green-e* Certified REC Products

	Customers		Sales (millions of kWh)	
	2002	**2003***	**2002**	**2003***
Residential	2,000	2,739	8.6	7.8
Nonresidential	187	398	68.0	331.8
Total	**2,187**	**3,137**	**76.6**	**339.6**

Source: Center for Resource Solutions (2003)
*2003 data represent preliminary (unaudited) figures.

Summary and Observations

Nationally, some 400,000 electricity customers are purchasing a green power product through their regulated utility company, from green power marketers in a competitive market setting, or in the form of RECs (**Table 10**). While the most successful utility programs have achieved customer participation rates of 4% to 11%, average participation is only about 1% for utility programs. Competitive markets have yielded similar averages where markets are conducive to competition and, thus, customer switching is occurring. Renewable energy certificates offer another product alternative and have been particularly popular with nonresidential customers.

Table 10: Estimated Green Power Customers and Sales by Market Segment (2003)

	Customers	Sales (billions of kWh)*
Utility Green Pricing	265,000	1.3
Competitive Markets	150,000	1.9
REC Markets	5,000	0.7
Retail Total	**420,000**	**3.9**

*Includes sales of new and existing renewable energy

Although the green power market is still evolving, it is already clear that it represents an important stimulus for renewable energy development. Green power marketing provides a new type of revenue stream for renewable energy developers, while raising consumer awareness of

the benefits of renewable energy. An estimated 3.9 billion kWh of green power was sold in these voluntary markets in 2003, including energy from existing renewable energy sources. About 1,600 MW of new renewable energy capacity is currently supported in part through consumer demand for green power, and another nearly 400 MW of capacity is planned in the short term (**Table 11**).

Table 11: New Renewables Capacity Supplying Green Power Markets (2003)

Market	MW in Place	MW Planned
Utility Green Pricing	520.8	169.7
Competitive Markets/REC Markets	1,126.5	223.7
Total	**1,647.3**	**393.4**

Source: Bird and Swezey (2004)

Several trends are clear from this review:

- Sales of green power continue to grow significantly. For example, sales through utility green pricing programs more than doubled from 2001 to 2003. Also, green power markets, as a whole, are supporting nearly 2,000 MW of new renewable energy development, up from an estimated 1,400 MW at the end of 2002 (Bird and Swezey, 2003). Purchases by large, nonresidential customers account for much of the growth in sales, although residential sales also continue to grow. In addition, customers who participate in green pricing programs have increased the size of their purchases.

- The number of customers purchasing green power nationwide remained relatively flat, as losses in California offset growth in other markets during 2003. However, participants in utility green pricing programs increased by about 16%, with much faster growth among the nonresidential sector. In addition, markets in the Northeast and Texas experienced some gains.

- Participation rates among the top utility green pricing programs showed improvement, with average rates ranging from 4% to 11% in 2003 compared to 3% to 6% in 2002. However, average participation rates among all programs remained relatively steady at about 1%, primarily due to a large number of relatively inactive programs and the introduction of new programs. Programs that have been in existence for at least four years have an average participation rate of 1.8%.

- About a dozen utility green pricing programs account for the vast majority of sales and participants. Therefore, sustained growth will depend on the ability of utilities to translate the success of a small number of programs to the rest of the industry.

- Utility green pricing premiums are falling, from a combination of lower-than-expected resource costs, incentives, and higher prices of conventional generation fuels.

- Although utilities continue to add green pricing programs at a steady rate, only 15% of the nation's utilities offer a green pricing product. The greatest impetus for the introduction of new programs has come from state mandates, indicating that growth in programs may plateau unless more states require green power tariffs.

- While competitive markets accounted for half of all green power sales in 2003, new competitive retail market opportunities have stagnated because no new markets will open in the foreseeable future. And because of competitive market barriers, green power marketers have had trouble succeeding with bundled green power sales in most restructured markets. Many marketers have turned to RECs as an alternative for making green power sales in competitive markets. In addition, marketer partnerships with default suppliers show promise in jump-starting the market, particularly among residential customers—but the jury is still out on whether these partnerships will have any greater level of success.

- Nonresidential customers are driving the success of the RECs market as RECs introduce tremendous flexibility in purchasing. Sales of *Green-e* certified RECs to nonresidential customers increased nearly fivefold in 2003, indicating the growing level of attraction that RECs hold for this market segment.

- The use of RECs continues to increase and will put downward pressure on green power prices in voluntary purchase markets.

Utility Green Pricing Programs

Green pricing is an optional utility service that gives customers an opportunity to support a greater level of utility company investment in renewable energy technologies. Participating customers pay a premium on their electric bill to cover the incremental cost of the additional renewable energy. This section presents information on utilities that offer green pricing programs to their customers (see **Tables A-1** and **A-2** for a list of utilities and a summary of green pricing programs by state, respectively).[1]

Alabama Power Company—Alabama Power Company offers its residential customers a *Renewable Energy Rate* under which they can purchase 100-kWh blocks of power generated from renewable energy sources for an additional $6 a month, or a premium of 6¢/kWh above the standard rate. The initial source of the green power is Alabama-grown switchgrass, co-fired in a utility-owned coal-fired power plant. Participating customers must subscribe for a minimum of one year.

City of Alameda—Since 1999, Alameda Power and Telecom has offered its customers the ability to voluntarily contribute to utility investments in clean power programs. Although the California-based municipal utility already obtains more than 80% of its power resources from renewable energy sources, it offers the *Clean Future Fund*, through which customers can affect the way the utility "will make future investments in generation sources." Participating customers pay an additional 1.0¢/kWh on their bills or about $3.75 per month for the typical household. Fully 100% of the contributions go to fund new renewable resources.

Alliant Energy—Alliant offers the *Second Nature* program under which residential customers in Iowa, Minnesota, and Wisconsin can support renewable energy equal to 25%, 50%, or 100% of their electric usage. Farm, small business, and commercial/industrial utility customers in Iowa and Minnesota can choose a monthly contribution to support renewable energy. The power to supply the program comes from a mix of new landfill gas and wind energy projects and is priced at a rate premium of 2.0¢/kWh. The *Second Nature* product is *Green-e* certified by the Center for Resource Solutions (CRS).

American Municipal Power–Ohio—American Municipal Power–Ohio (AMP-Ohio), an Ohio-based nonprofit wholesale power supplier for municipal utilities, partners with Green Mountain Energy Company to offer a new renewable energy option to its 86 member communities, representing more than 380,000 customers in Ohio, Pennsylvania, West Virginia, and Michigan. Under the *Nature's Energy* program, residential and small-business customers can purchase electricity generated from small hydro and wind facilities for 1.3¢/kWh above standard electric rates or an extra $8 to $10 per month for the average customer. Commercial customers can buy green power in 1-MWh increments at the same 1.3¢/kWh premium. The power for the program

[1] In some cases, several distribution cooperatives or other publicly owned utilities might market green power supplied by a single utility entity, such as a generation and transmission (G&T) cooperative. For example, the Tennessee Valley Authority supplies green power to 67 local public power companies that market the power to their customers. Only the supplier utility organization is described here.

is supplied from a 3.6-MW wind energy project in Bowling Green and a hydro project installed in 1999. AMP-Ohio plans to double the size of the wind project in 2004.

Anaheim Public Utilities—Anaheim Public Utilities, the municipal utility of Anaheim, California, offers its roughly 100,000 residential and business customers two green power options. Under the utility's *Green Power For The Grid* program, customers can purchase 100-kWh blocks of green power for an additional $1.50 per month, or 1.5¢/kWh. Residential customers can sign up to purchase up to three blocks of green power each month. Business customers must purchase a minimum of 10 blocks, with a maximum of 30 blocks. To supply the program, Anaheim purchases 6 MW of wind energy from the 146-MW High Winds Energy Center in Solano County, California, and plans to purchase the output from a 13.4-MW landfill gas generation facility to be constructed in Valencia, California, in 2005.

Under its *Sun Power For the Schools* program, Anaheim customers can make monthly contributions toward the purchase, installation, and maintenance of solar photovoltaic (PV) power systems at city schools. Residential customers can contribute in increments of $1.50, while the minimum contribution for business customers is $15 per month. Monies collected through the program pay 60% of the PV system costs, while the utility and participating schools split the remaining cost. The schools are responsible for the design, purchase, and installation of the solar systems. Customers participating in one or both programs must agree to enroll for a minimum of six months.

Arizona Public Service—In 1996, Arizona Public Service (APS) established a voluntary solar tariff to give residents, businesses, and communities the opportunity to purchase solar energy and help develop the technology. Through the utility's *SolarPartners* program, customers can purchase 15-kilowatt-hour (kWh) blocks of solar energy for $2.64 a month (or 17.6¢/kWh). Program costs have been partly subsidized by shareholders and the U.S. Department of Energy (DOE) through the Utility PhotoVoltaic Group (UPVG) (now the Solar Electric Power Association).

Customer response far exceeded the utility's initial targets, and the program has been continually expanded. More than 1 MW of solar projects have been built in various cities, including Flagstaff, Tempe, Scottsdale, Gilbert, Glendale, Prescott, and Yuma, with many of the projects built in partnership with the host cities.

City of Ashland—The City of Ashland (Oregon) and the nonprofit Bonneville Environmental Foundation (BEF) have teamed to offer the city's electricity customers a green power option. Under the *Renewable Pioneers* program, residents and businesses can support local and regional renewable energy development by purchasing *Green Tags* directly from BEF at a cost of 2¢/kWh. Ten percent of the revenues from green tags sales to Ashland residents and businesses are used to fund solar projects within the city. Program participants will see no change in their utility bills because the green tags purchase is a separate transaction with BEF. This new program replaces Ashland's *Solar Pioneers* program.

Austin Energy—In January 2000, Austin Energy, the municipally owned utility of the City of Austin, Texas, launched *GreenChoice,* a program through which residential and business

customers can choose to receive 100% renewable energy generated primarily from wind and landfill gas resources. In just 10 months, the utility had fully subscribed the initial 40 MW of renewable energy supply planned for the program and has since more than doubled its renewable energy purchases.

A key feature of the program is that subscribers pay a "green rate," which remains fixed for the term of the utility's renewable energy contracts, which is generally 10 years. The green rate replaces the utility's standard fuel charge and, thus, *GreenChoice* customers are protected from fuel cost adjustments caused by rising fuel prices. The utility is now in the third phase of renewable energy supply procurement for which the green rate charge is 3.3¢/kWh. At the current fuel charge of 2.796¢/kWh, the effective green power premium is about 0.5¢/kWh for new *GreenChoice* subscribers.

Avista Utilities—Avista, an investor-owned utility serving 320,000 electricity customers in Washington and Idaho, began offering a wind power option to its residential and business customers in early 2002. Under the *Buck-a-Block* program, customers could purchase 55-kWh blocks of wind energy for $1, or 1.8¢/kWh. However, Avista recently began offering 300-kWh blocks of wind energy for the same $1 price, effectively lowering the green power premium to 0.33¢/kWh. The power to serve the program is supplied by PPM Energy from the Stateline wind project located along the Oregon/Washington border.

Basin Electric Power Cooperative—Basin Electric, a regional power cooperative that generates and transmits electricity to 124 member rural electric systems in nine states, offers wind energy to its member systems under the *Prairie Winds* brand. More than 50 of its member systems offer the product to their retail customers. Initially, the wind energy was supplied from two, 1.3-MW wind projects in North Dakota and South Dakota, and priced at $2.50 per 100-kWh block, or 2.5¢/kWh. However, Basin has since added more than 80 MW of wind energy to its resource portfolio through joint projects and purchase agreements, which has expanded the amount of "green tags" available for sale. Basin is now offering green tags through the *Prairie Winds* program at a price of $5 per 1,000-kWh block, or 0.5¢/kWh.

Benton County PUD—In 1999, Benton County PUD, which serves about 37,000 customers in Benton County, Washington, began offering its customers the opportunity to support power purchases from Klickitat PUD's Roosevelt Regional Landfill Gas Facility. Benton pays about 3.5¢/kWh for the landfill power, which at the time was approximately 1¢/kWh more than it pays for its other power sources. In late 2002, the utility added 3 MW to its green power supply with purchases from the 48-MW Nine Canyon Wind Project in eastern Washington. Customers choose their level of program participation with minimum contributions of $1 per month required for residential customers and $10 per month for commercial customers. The contributions are not tied directly to the customer's electricity use.

Boone Electric Cooperative—Boone Electric Cooperative (BEC), which serves about 25,000 customers in Boone County and portions of five other mid-Missouri counties, announced in 2003 that it would begin offering its customers a wind energy purchase option. The green power would be sold in 100-kWh blocks at a price of about $3 per month, or a rate premium of 3¢/kWh, and sourced from Aquila's 110-MW Gray County Wind Farm in southeastern Kansas.

However, in February 2004, BEC announced that it was lowering the premium charged for its *Renewable Choice* green power product from 3¢/kWh to 2¢/kWh. The premium reduction stemmed from the utility's use of walnut shells that were ruined when tornadoes struck a storage building in Stockton, Missouri. The damaged shells were transported about 150 miles and co-fired in a coal plant, generating nearly four million kWh that are now used to supply the green pricing program.

City of Bowling Green—The City of Bowling Green (Ohio) Public Utilities Department offers its customers the opportunity to purchase "green power" for their electricity needs (in 25% increments) at a price premium of 1.38¢/kWh. The power is supplied from a run of the river hydro facility, of which Bowling Green owns a 6-MW share and a 3.6-MW wind energy project. Revenues collected from the green power customers are used to construct new solar and wind projects.

Burbank Water and Power—Burbank Water and Power (BWP), a municipal utility serving about 50,000 electricity customers in the Los Angeles suburb of Burbank, offers the *Clean Green Support* program, under which residential customers can purchase green power in the form of "green tickets" for 50% or 100% of the their monthly electricity needs. The cost for the 50% green power option is an additional $3 per month (about 1.2¢/kWh for the average residential consumer), while the cost for the 100% option is $5 (about 1¢/kWh, on average). There is no minimum enrollment period. The green tickets—also known as renewable energy certificates (RECs)—represent the environmental attributes of electricity generation from renewable energy sources, such as wind, solar, hydro, geothermal, and biomass energy. BWP shops the open market for the best prices.

Cedar Falls Utilities—Since 1999, Cedar Falls Utilities (CFU) has offered its customers the option of contributing $2.50 each month to support the operation and maintenance of three, 750-kW wind turbines that were installed in November 1998 by a consortium of seven Iowa municipal electric utilities. CFU owns two-thirds of the wind project. The project, (near Algona, Iowa) received $2.8 million of funding from the U.S. DOE and the Electric Power Research Institute (EPRI) through the Utility Wind Turbine Verification Program.

Central Vermont Public Service—In August 2004, the Vermont Public Service Board approved a new green pricing program to be offered by CVPS that will tap farm-based methane systems. The *CVPS Cow Power* program will offer customers the option of receiving 25%, 50%, or 100% of their electricity as green power, at an extra cost of 4¢/kWh. If farm-based generation proves insufficient to supply the program, the utility will first attempt to acquire and retire renewable energy certificates from other regionally based renewable generation sources or, as a last resort, deposit customer payments into the CVPS Renewable Development Fund that will provide incentives for farm-based generation projects. CVPS serves more than 150,000 customers in nearly three-quarters of the towns, villages, and cities in Vermont.

Chelan County PUD—Chelan County PUD, with more than 38,000 customers in north-central Washington state, offers the *Sustainable Natural Alternative Power* (SNAP) program, which gives customers an opportunity to purchase alternative energy and support local producers of

solar and wind power. Customers donate a fixed amount each month, and the funds are distributed annually to local producers, who supply power into the PUD's electrical grid for use by local customers. The contributions are not tied directly to the customer's electricity use.

Clallum County PUD—Clallum County PUD, a public utility serving about 25,000 customers in northwestern Washington, offers its customers a fixed-rate green power option. Under the program, customers can opt to purchase green power for 100% of their electricity needs at a fixed rate of 6.9¢/kWh, which represents a premium of 0.5¢/kWh above the utility's standard rate. To supply the program, Clallum purchases one average megawatt of power from the 8-MW Klickitat landfill-gas facility located in Roosevelt, Washington.

Clark Public Utilities—Clark Public Utilities, a public utility district that provides electric service to more than 155,000 customers throughout Clark County, Washington, offers its customers the ability to purchase 100-kWh blocks of green power for an additional $1.50 each month, or 1.5¢/kWh. The power for the *Green Lights* program is sourced from the Bonneville Environmental Foundation (BEF) in the form of renewable energy certificates representing the environmental attributes of power generated from new wind and solar projects in the Pacific Northwest region. BEF is also assisting with product marketing. A portion of the customer premiums is used to develop new renewable energy projects in Clark County.

Colorado Springs Utilities—Colorado Springs Utilities, which serves more than 569,000 customers in the Pikes Peak region of Colorado, offers its residential and commercial customers a wind power option at a cost of $3 per 100-kWh block, or a premium of 3¢/kWh above the standard rate. The utility purchases power from Xcel Energy's Ponnequin wind project to supply the program.

Concord Municipal Light Plant—Concord Municipal Light Plant (CMLP), which supplies electricity to approximately 7,200 residents and businesses in Concord, Massachusetts, offers its residential and business customers an option to purchase 100-kWh blocks of hydropower for an extra $3 each month, or a premium of 3¢/kWh. Customers can buy an unlimited number of blocks. Electricity for the program will be supplied from a repowered 160-kW, run-of-the-river hydro facility that will generate approximately 500,000 kWh per year.

Consumers Energy—Since 2001, Consumers Energy, an investor-owned utility that provides electricity to about 1.7 million consumers in Michigan, has operated a green pricing pilot program, under which residential and business customers can purchase green power to meet 10%, 50%, or 100% of their electricity needs at a price premium of 3.2¢/kWh. The initial 1.8 MW of wind energy supply, sourced from Bay Windpower's 5.25-MW Mackinaw City Wind Power Project, was quickly subscribed; and no new renewable energy supplies have been added to meet continued customer demand. The pilot program is scheduled to expire on December 31.

In May 2004, the Michigan Public Service Commission (MPSC) issued an order requiring Consumers Energy to implement a new renewable resources program to meet customer demand for renewable energy. The program is to include a "phased-in approach" to adding renewable energy capacity to more closely match customer subscriptions. The MPSC also ordered the utility to implement a non-bypassable charge of 5 cents per meter per month on all customers as

a "funding mechanism to recover green power program costs not covered by contributions of customers who agree to pay a premium for green power."

Corn Belt Power Cooperative—Corn Belt Power Cooperative, an Iowa-based generation and transmission entity serving 11 distribution cooperatives and one municipal electric cooperative, is providing wind energy to its member systems. The majority of the distribution co-ops have established programs under which customers can contribute funds to support Corn Belt's 7-MW purchase from the 98-MW Hancock County Wind Energy Center in Iowa. The contributions are used to pay the above-market cost of the wind energy purchase. Any excess revenues collected will be used to support additional development of Iowa-based renewable energy resources.

Two Corn Belt distribution utilities—Butler County REC and Sac County REC—offer a different program through which customers can support the development of local, small wind energy projects by contributing $1.50 each month for 100 kWh of wind energy production. The utilities pay 1.5¢/kWh above avoided cost for wind energy generated from new, customer-owned systems of less than 100 kW in size.

Cowlitz PUD—Cowlitz PUD, which supplies electricity to customers in southwestern Washington, has established a *Renewable Resource Energy* program, through which its residential and business customers can support the development of new renewable energy sources in the Pacific Northwest. Customers can purchase 100-kWh blocks of green power for an additional $2 per month, or a premium of 2¢/kWh. To supply the program, Cowlitz has an agreement with the Bonneville Environmental Foundation to purchase green tags generated from the Stateline and Condon wind projects in Washington and Oregon and the Hanford/White Bluffs solar project near Richland, Washington.

Dairyland Power Cooperative—In 1998, Dairyland Power Cooperative of Wisconsin launched the *Evergreen* renewable energy program, which makes renewable energy generation available to its 25 member distribution cooperatives. Initially, the product was supplied from Great River Energy's Chandler Hills wind project in Minnesota, but Dairyland has contracted for additional wind energy resources as well as for power from bio-methane systems at landfills and dairy farms. The power is available to customers at a price of $1.50 per 100-kWh block, or 1.5¢/kWh, which represents a price reduction of 50% from the original product premium of 3¢/kWh.

DTE Energy (formerly Detroit Edison)—In 1996, DTE Energy was one of the first utilities in the United States to offer a green pricing program when it established the *SolarCurrents* program, supporting the development of centrally located PV projects. Customers paid $6.59 for 100-watt blocks of solar generating capacity. Two facilities, totaling 54.8 kW, were developed through the program and were cost-shared by DOE and UPVG. The program has not been expanded and the utility is not soliciting new subscribers. In 1997, Detroit Edison introduced a *SolarSchools* program, through which commercial businesses could sponsor solar energy service at local elementary schools, to be provided from the two existing projects, as well as a solar energy curriculum for students. The utility recently issued an RFP for a "turnkey" green power marketing program, which it plans to initiate in early 2006.

Dominion North Carolina Power—In 2003, the North Carolina Utilities Commission approved a stakeholder-developed plan to offer two green power products to utility customers statewide. The first product is a "mass-market" product consisting of a resource mix of new solar, wind, and methane from biomass that is offered primarily to residential customers at a cost of $4 per 100-kWh block or 4.0¢/kWh. The second product is a "large-volume" product that includes a resource mix of new and existing solar, wind, small hydro, and biomass and is offered to larger-volume customers at a price of $2.50 per 100-kWh block or 2.5¢/kWh. The green power products are offered by all of the state's electric utilities, including Dominion North Carolina Power, Duke Power, Progress Energy, ElectriCities, and North Carolina electric cooperatives. The program is administered by Advanced Energy, a Raleigh-based nonprofit research organization.

Duke Power—In 2003, the North Carolina Utilities Commission approved a stakeholder-developed plan to offer two green power products to utility customers statewide. The first product is a "mass-market" product consisting of a resource mix of new solar, wind, and methane from biomass that is offered primarily to residential customers at a cost of $4 per 100-kWh block or 4.0¢/kWh. The second product is a "large-volume" product that includes a resource mix of new and existing solar, wind, small hydro, and biomass and is offered to larger-volume customers at a price of $2.50 per 100-kWh block or 2.5¢/kWh. The green power products are offered by all of the state's electric utilities, including Dominion North Carolina Power, Duke Power, Progress Energy, ElectriCities, and North Carolina electric cooperatives. The program is administered by Advanced Energy, a Raleigh-based nonprofit research organization.

East Kentucky Power Cooperative— East Kentucky Power Cooperative, a generation and transmission (G&T) cooperative serving 16 distribution utilities in Kentucky, offers a green power option, *EnviroWatts*, to its member cooperatives. The green power is offered to residential and business customers in 100-kWh blocks for $2.75, or 2.75¢/kWh, and supplied from new Kentucky-based landfill-gas facilities. Customers must commit to the green power purchase for one year.

El Paso Electric—El Paso, which serves customers in southern New Mexico and west Texas, offers its customers a wind energy purchase option through the *Renewable Energy Tariff Program*. Residential and commercial customers can purchase 100-kWh blocks of wind power at costs ranging from $1.92 to $3.19 per month, or 1.92¢/kWh to 3.19¢/kWh, depending on the state and customer classification. The wind power is supplied from two, 660-kW turbines at Hueco Mountain Wind Ranch near Horizon City, Texas. Customers must agree to participate for a minimum of one year.

ElectriCities—In 2003, the North Carolina Utilities Commission approved a stakeholder-developed plan to offer two green power products to utility customers statewide. The first product is a "mass-market" product consisting of a resource mix of new solar, wind, and methane from biomass that is offered primarily to residential customers at a cost of $4 per 100-kWh block or 4.0¢/kWh. The second product is a "large-volume" product that includes a resource mix of new and existing solar, wind, small hydro, and biomass and is offered to larger-volume customers at a price of $2.50 per 100-kWh block or 2.5¢/kWh. The green power products are offered by all of the state's electric utilities, including Dominion North Carolina Power, Duke

Power, Progress Energy, ElectriCities, and North Carolina electric cooperatives. The program is administered by Advanced Energy, a Raleigh-based nonprofit research organization.

Emerald People's Utility District—Emerald People's Utility District (EPUD), a public utility near Eugene, Oregon, serving 17,000 customers, offers its electric customers three renewable power options: *50% Renewable*, *100% Renewable* and *100% Wind*. The two renewable products are offered in partnership with Green Mountain Energy Company and consist of a blend of 80% geothermal and 20% wind priced at 0.78¢/kWh. The wind product is priced at 1.2¢/kWh and supplied through the Bonneville Environmental Foundation using wind energy from projects such as the Stateline Wind Energy Center.

Eugene Water and Electric Board—Since 1999, Eugene Water and Electric Board (EWEB) has marketed wind power to customers from its 20% share of the Foote Creek Rim I wind project located in southeastern Wyoming. Customers can purchase wind energy to provide from 10% to 100% of their electricity needs for which the utility charges a fixed wind power rate of 5.274¢/kWh. Since the program was established, the effective premium for the *EWEB Windpower* product has fallen from 3.09¢/kWh to about 0.7¢/kWh for the average wind power customer because of cost increases experienced for traditional generation sources. In 2002, EWEB signed a contract with PacifiCorp Power Marketing (now PPM Energy) to purchase a share of the output from the Stateline Wind Project located on the Oregon/Washington border.

Farmers Electric Cooperative—Farmers Electric Cooperative, which serves 650 electric meters in eastern Iowa, began offering a green power option to its electricity customers in January 2004. Under its *Green Power Project*, customers can sign up via their utility bills to contribute a minimum of $2.50 per month to support the development of renewable energy sources. The funds will be used to support the use of biodiesel in diesel-fired peaking generators or the development of Iowa-based wind resources. All utilities in Iowa are required by state law to offer a green power option to their electricity customers.

Florida Power & Light—In December 2003, Florida Power & Light (FPL) received approval from the Florida Public Service Commission to offer its residential customers a green pricing program. Under the three-year pilot program, customers can purchase renewable energy certificates representing power generated from projects in the Southeast region, including Florida. The RECs are sold in 1,000-kWh blocks for $9.75, or 0.975¢/kWh. The utility has also committed to the development or purchase of 150 kW of photovoltaics capacity in Florida for every 10,000 participating customers. FPL partners with Green Mountain Energy Company to market the program to customers.

Fort Collins Utilities (see also Platte River Power Authority)—Fort Collins Utilities has offered a wind energy product to its customers since 1996. The Colorado-based municipality recently lowered the premium charged for its *Wind Power Program* to 1.0¢/kWh from 2.5¢/kWh. The lower premium, guaranteed for 2004 and 2005, resulted from a decision to purchase wind energy certificates from the new, 144-MW Pleasant Valley Wind Energy Facility in southwest Wyoming—the utility is purchasing about 5% of the project output. The utility continues to purchase wind energy from Platte River Power Authority, which is generated at the Medicine Bow, Wyoming, wind site.

Residential customers can choose to buy $5 or $10 blocks of wind energy, or have their total energy use supplied with wind. Under the new pricing structure, the average residential customer would pay an extra $7 per month to meet their entire electricity needs with wind energy. Business customers can either purchase wind energy to meet their entire monthly electricity use or in 2,500-kWh blocks for $25 per month.

Gainesville Regional Utilities—Gainesville Regional Utilities offers a green power option to its approximately 82,000 residential and business customers in Florida. Under the *GRUgreen Energy* program, customers can purchase renewable energy for any portion of their electricity usage for an additional 2¢/kWh. Most of the power for the program (95%) will be supplied from a new 2.3-MW landfill gas facility in Alachua County. The remainder of the power will be supplied from wind energy certificates and local solar systems.

Georgia Electric Membership Corporation—Sixteen member utilities of the Georgia Electric Membership Corporation, which collectively serve about 850,000 electric meters, offer a green power option to their residential and business customers. Under the Green Power EMC program, residential customers of the electric cooperatives can sign up to purchase 150-kWh blocks of green power for an additional $3 to $5 each month (2¢/kWh to 3.33¢/kWh), depending on the cooperative. Business customers can sign up for a percentage of their power use in proportion to their annual electricity use. Power for the program is supplied from three in-state landfill gas projects with a combined capacity of 9 MW. A portion of the program revenues will be placed into a fund that will be used to develop additional renewable energy resources, such as wind, solar, and low-impact hydro.

Georgia Power—Georgia Power, which serves 2 million customers across the state, has received approval from the Georgia Public Service Commission to offer its residential and business customers an option to purchase 100-kWh blocks of green power for an additional $5.50 per month or a premium of 5.5¢/kWh above the standard electricity rate. Small businesses wishing to participate must purchase a minimum of two blocks, while large businesses must purchase at least 400 blocks each month. Participating customers are required to subscribe for a minimum of one year. The utility has issued an RFP for renewable energy supplies.

Grant County PUD—Grant County PUD, a public utility serving about 35,000 retail customers in central Washington, offers its customers a wind power purchase option. Under its *Alternative Energy Resources* program, customers can purchase 100-kWh blocks of wind power for an extra $2 per month or 2.0¢/kWh. The power is supplied from the utility's 25% share of the 50-MW Nine Canyon Wind Project located in eastern Washington.

Grays Harbor PUD—Grays Harbor PUD, which supplies electricity to about 32,000 residents of Grays Harbor County in western Washington, offers a renewable resource option through which its customers can purchase 100-kWh blocks of renewable energy for $3, or a premium of 3¢/kWh. The power is supplied from the utility's 6-MW share of the 50-MW Nine Canyon Wind Project located in eastern Washington.

Great River Energy—Great River, formed in 1998 through the merger of Cooperative Power Association and United Power Association, offers the *Wellspring* renewable energy program to its 29 member distribution cooperatives in Minnesota and Wisconsin. The wind power is supplied from the 6-MW Chandler Hills wind project. The project was built in three separate 1.98-MW phases to take advantage of state incentive payments available to wind energy facilities of 2 MW or less in size. Great River makes the power available to its members with a suggested retail price premium of 1.5¢/kWh, but each distribution utility sets the wind energy premium for its customers.

Green Mountain Power—Green Mountain Power (GMP), an investor-owned utility that serves one-quarter of the retail customers in Vermont, offers a monthly renewable energy service that enables customers to reduce greenhouse gas emissions by supporting the development of new renewable energy projects. Under the *CoolHome* program, customers can make tax-deductible donations of $6 per month to Clean Air-Cool Planet (a nonprofit organization dedicated to finding solutions to global climate change), which, in turn, uses the donations to support development of new renewable energy projects through Vermont-based NativeEnergy. Program revenues are being used to support two 30-kW turbines fueled by methane gas from a wastewater facility in Vermont, a 750-kW wind turbine on the Rosebud Sioux reservation in South Dakota, and several farm methane projects in Vermont.

Hawaiian Electric—In 1996, Hawaiian Electric (HECO) initiated a program to be funded in part with customer contributions with a minimum goal of installing 20 kW of PV systems on public school facilities. Customers can make voluntary, monthly fixed-dollar contributions or lump-sum contributions at any time. During its entire period of operation, the *Sun Power for Schools* program has supported the installation of about 22.5 kW of PV at 19 schools.

Holy Cross Energy—Holy Cross, which serves more than 43,000 customers in Colorado's Roaring Fork Valley, offers its customers two different green power options. Under the *Wind Power Pioneers* program, customers can purchase 100-kWh blocks of Colorado-based wind energy at a rate premium of 2.5¢/kWh with the wind energy sourced from Xcel Energy. Under the *Local Renewable Energy Pool* program, customers can purchase green power sourced from local renewable energy projects in blocks of 75 kWh for $2.50 per month, or a premium of 3.3¢/kWh.

Hoosier Energy—Hoosier Energy, a generation and transmission cooperative serving 17 distribution utilities in Indiana, provides a green power option to its member cooperatives. Participating utilities offer the green option, *EnviroWatts*, to their retail customers at premiums ranging from $2 to $4 per 100-kWh block, or 2.0¢/kWh to 4.0¢/kWh. The green power is being supplied from an Indiana-based landfill gas project owned by Wabash Valley Power Association.

Idaho Power Company—Idaho Power Company, which serves 700,000 customers in southern Idaho, eastern Oregon, and northern Nevada, offers a green power program through which residential and business customers in Idaho can contribute a fixed dollar amount each month to support the development of renewable resources through the purchase of renewable energy certificates supplied by the Bonneville Environmental Foundation. Customer contributions are used exclusively to purchase renewable energy, with program overhead and marketing expenses

funded from other sources. Although the green power contributions are not tied directly to the customer's electricity use, each $3 contribution purchases the equivalent of 240 kWh of green power, which represents a renewable energy price of 1.25¢/kWh.

Indianapolis Power and Light Company—Indianapolis Power and Light Company (IPL) offers its residential customers, as well as commercial and industrial groups whose demand does not exceed 2,000 kilowatts, an option of purchasing 10%, 25%, 50%, or 100% of their monthly electricity use from renewable energy sources. The power to supply the program is sourced from outside the IPL service territory with the rate premium capped at 3.0¢/kWh.

Iowa Association of Municipal Utilities—About 80 municipally owned electric utilities in Iowa are participating in the Iowa Association of Municipal Utilities (IAMU) umbrella green pricing program, *Green City Energy*, which gives customers the ability to support renewable energy development from sources such as wind, solar, and biodiesel. Some utilities allow customers to make one-time or monthly contributions, while other utilities offer customers the option of purchasing green power or renewable energy certificates. All electric utilities in Iowa are required by state law to offer a green pricing program to their customers.

Lansing Board of Water and Light—Lansing Board of Water and Light, the municipally owned utility of Lansing, Michigan, offers its 97,000 residential and business customers an option to purchase 250 kilowatt-hour blocks of green power for an extra $7.50 per month, or a premium of 3.0¢/kWh. The power for the *GreenWise Electric Power* program comes from existing renewable energy projects: a Lansing-based landfill-gas facility and two small-hydro facilities in Cheboygan County. Customers must subscribe for a minimum of three years.

Lewis County PUD—Lewis County PUD, a public utility serving about 27,000 customers in western Washington, offers its customers an optional *Green Power Energy Rate*. Under the program, residential and business customers can purchase 100-kWh blocks of wind power for an additional $2 each month, or 2¢/kWh. To supply the program, the utility is purchasing 1 MW of power from the 50-MW Nine Canyon Wind Project located near Kennewick, Washington.

Lincoln Electric System—In 1998 and 1999, Lincoln Electric System (LES) constructed two, 660-kW wind turbines on the northeast side of Lincoln, Nebraska, to supply its customers with a green power option. The utility accepts monthly donations of any whole dollar amount of $5 or greater, with a minimum monthly contribution of $4.30 to purchase the equivalent of about 100 kWh. Initially priced at 6.0¢/kWh, LES was able to reduce the wind energy premium to 4.3¢/kWh because of its eligibility for the Renewable Energy Production Incentive, available through the U.S. Department of Energy. More recently, LES has enhanced the program to provide greater recognition for participating customers depending on their level of contribution.

Los Angeles Department of Water and Power—Since 1999, the Los Angeles Department of Water and Power (LADWP) has offered the *Green Power for a Green L.A.* program, which gives residents the option to purchase green power for 100% of their electricity needs (with 20% coming from new renewable energy sources) for $3 per month. The extra cost can be offset by free energy efficiency products and services provided by the utility. In 2003, program demand was met by existing small hydroelectric (52%), solar (0.1%), and biogas energy (38%), as well

as a purchase of wind energy (10%). As local and regional renewable energy sources have been identified and developed, the future focus of the program will be to add capacity with new local and regional renewable energy projects instead of using existing resources.

Lower Valley Energy—Lower Valley Energy, an electric cooperative serving about 13,500 members in western Wyoming and southeastern Idaho, offers its residential and business customers an *Environmentally Preferred Power* product supplied under an agreement with the Bonneville Power Administration. The renewable power comes from the Foote Creek Rim Wind Project (near Laramie, Wyoming) and from other regional projects. Residential customers can purchase 300-kWh blocks of green power for $5 each month, which represents a rate premium of 1.67¢/kWh, while commercial customers can purchase 3,000-kWh blocks for $50 each month. Customers are free to sign up for as many blocks as they desire.

Madison Gas and Electric—In 1999, Madison Gas and Electric (MGE), which serves 120,000 customers in and around Madison, Wisconsin, constructed an 11.22-MW wind farm in northeastern Wisconsin in 1999 with most of the output being marketed to customers as a green power option—a 3-MW portion of the project is being used to meet a state renewable energy mandate. The utility sells the power in 150-kWh blocks for $5 per month, which is a premium of 3.3¢/kWh over the standard electricity rate. Less than three months after the project came on-line, more than 5,100 residential customers and about 100 businesses had enrolled, fully subscribing the program.

Mason County PUD No. 3—Mason County PUD No. 3, which serves 28,000 customers in western Washington, offers a wind energy option to its residential and commercial customers. Under the *Mason Evergreen Power* program, customers can purchase 100-kWh blocks of wind power for $2 per month, or a premium of 2¢/kWh. Each block represents about 10% of an average residential customer's monthly electricity use. There is no limit on the number of blocks that can be purchased. Customers can enroll, change their participation level, or drop out of the program at any time. The green power is supplied from the utility's 2-MW share of the 64-MW, Nine Canyon Wind project in South Central Washington.

MidAmerican Energy—MidAmerican Energy offers a green power option to its nearly 600,000 Iowa-based residential and business customers. Under its *Renewable Advantage* program, customers can make one-time, periodic, or monthly contributions to support the development of new renewable energy resources. Customers can sign up to participate either by using a check-off box on their utility bill or via the utility's Web site.

Suggested contribution levels are $2.50 per month for residential customers and $5 per month for business customers. The funds collected will be used to construct a new, 1.5-MW wind turbine in Iowa that will be in addition to a 310-MW wind project already planned by the utility. One-fifth of the $1.6 million turbine cost will be covered by the voluntary customer contributions with MidAmerican shareholders funding the remaining amount. Future customer contributions could be used to develop additional renewable energy resources, such as solar, biomass, and animal waste methane facilities.

Midstate Electric Cooperative—Midstate Electric Cooperative, which serves about 12,000 member customers in central Oregon, offers its customers an *Environmentally Preferred Power* product derived from a mix of low-impact hydroelectric resources and wind energy purchased from the Bonneville Power Administration. Midstate sells the green power to residential and business customers in 100-kWh blocks for $2.50 per month (2.5¢/kWh) and requires a two-block minimum purchase.

Minnesota Power—Minnesota Power, an investor-owned utility serving approximately 140,000 customers in Minnesota and Wisconsin, offers its Minnesota customers an option to purchase 100-kWh blocks of wind energy for an additional $2.50 per month or 2.5¢/kWh. To supply the *WindSense* program, the utility has a 15-year agreement with Great River Energy to purchase half the output (about one MW) of three new wind generators at the Chandler Hills Wind Farm in southwestern Minnesota.

Minnkota Power Cooperative—Minnkota Power Cooperative, a generation and transmission cooperative operating in eastern North Dakota and northwestern Minnesota, offers its member distribution cooperatives and municipals the option to purchase wind-generated power through a program called *Infinity Wind Energy*. Customers can purchase 100-kWh blocks of wind energy for an additional $1.50 per month or a premium of 1.5¢/kWh. The wind energy is provided from two, 900-kW wind turbines in North Dakota.

Missouri River Energy Services—Missouri River Energy Services (MRES), a joint-action agency providing wholesale power to 56 member municipal utilities in Iowa, Minnesota, North Dakota, and South Dakota, makes wind energy available to these utilities through the *RiverWinds* program. The power supply comes from four 900-kW wind turbines outside of Worthington, Minnesota. Customers of participating utilities can purchase 100-kWh monthly blocks of wind energy for $2 to $2.50 per block (2.0¢kWh to 2.5¢kWh), depending on the utility. MRES also makes "green tags" available for 2.5¢kWh to nonmember municipal utilities interested in developing green pricing programs for their customers.

Moorhead Public Service—Moorhead Public Service (Minnesota) has constructed two, 750-kW wind turbines to serve customers of its *Capture the Wind* green pricing program. Both turbines were constructed only after the utility had fully subscribed the wind energy output. The utility charges a premium of 0.5¢/kWh for 100% renewable energy—one-third of the energy is provided from the wind projects and the remainder from hydro facilities already in the utility's resource mix. Thus, the effective premium for the wind power is 1.5¢/kWh. Residential customers must make a three-year purchase commitment and can choose to serve 100% of their electricity needs with the renewable energy blend or purchase monthly blocks of 1,000 kWh. Commercial customers pay the same premium and can purchase all of their electricity as renewable energy or buy monthly blocks of 1,500 kWh. Moorhead State University purchases 83,000 kWh each month, representing more than half of the average output of one turbine. The program is fully subscribed and the utility has no plans to expand it currently.

Muscatine Power and Water—Muscatine Power and Water, a municipal utility serving 10,800 electricity customers in eastern Iowa, offers a green power option—*Solar Muscatine*—through

which its residential customers can make monthly contributions of $3, $5, or $7 to support the acquisition and installation of photovoltaic arrays in the community.

City of New Smyrna Beach—The City of New Smyrna Beach (Florida) Utilities Commission offers its customers a green power contribution program through which customers can make monthly contributions of $2, $5 or $10 per month to support the installation of solar electric systems at local public facilities. To date, the city has installed two PV systems totaling 9.8 kW.

NorthWestern Energy—NorthWestern Energy, which provides default service to 288,000 electricity customers in Montana, offers the *E+ Green* program under which residential and business customers can purchase an unlimited number of 100-kWh blocks of renewable energy each month for $2 per block, or a premium of 2¢/kWh. Commercial and industrial customers that meet minimum purchase requirements can become *E+ Green Partners*, which makes them eligible for inclusion in program advertisements and entitles them to use the *E+ Green* program logo. The Bonneville Environmental Foundation (BEF) supplies the program with *Green-e* certified renewable energy certificates generated from wind and solar facilities located in the Pacific Northwest. BEF will also use program revenues to encourage new Montana-based renewable energy projects.

OG&E Electric Services—OG&E Electric Services, which serves about 700,000 retail electricity customers in Oklahoma and western Arkansas, offers 100-kWh blocks of wind power for an extra $2 per month or 2.0¢/kWh. However, wind power subscribers are exempted from the utility's fuel adjustment charge, which reduces the effective wind power premium. (In September 2004, the fuel adjustment charge amounted to about 1.07¢/kWh, making the effective price premium for the wind power 0.93¢/kWh.) The wind energy is supplied from OG&E's 51-MW share of the Oklahoma Wind Energy Center project near Woodward, Oklahoma.

Oklahoma Municipal Power Association—Oklahoma Municipal Power Association, a joint-action agency serving 35 municipally owned electric systems in Oklahoma, offers wind energy from a 51-MW wind project that it owns at the Oklahoma Wind Energy Center. The wind energy is offered to customers of member utilities in 100-kWh increments each month for $1.80, or a rate premium of 1.8¢/kWh. The wind energy purchases are exempt from the utility's monthly fuel-cost charge, which lowered the effective wind energy premium to 1¢/kWh under the fuel-cost structure in place in February 2004.

Omaha Public Power District—The Omaha Public Power District (OPPD) offers a green pricing option to its customers consisting of power generated from new wind and landfill gas resources at a price premium of 3¢/kWh. Residential customers can participate at one of four set levels, ranging from $4.50 to $30 per month (150 kWh to 1,000 kWh per month), while commercial customers can obtain 25%, 50%, or 100% of their power needs through the program. The green power is supplied from a 660-kW wind turbine and a 3.2-MW landfill gas plant. Customers must agree to participate in the program for a minimum of one year. OPPD serves more than 280,000 customers in southeast Nebraska.

Orcas Power and Light Cooperative—Orcas Power and Light Cooperative (OPALCO), an electric cooperative serving Washington's San Juan Islands, offers its customers a green power

mix of low-impact hydropower and wind energy sourced from the Bonneville Power Administration at a price of $3.50 per 100-kWh block, or a premium of 3.5¢/kWh. The utility uses a portion of the customer contributions to support the development of on-site renewable resources in its service territory. OPALCO "buys down" the cost of customer-owned systems and purchases the system output at above-market prices—at the end of 2002, the utility had 16 renewable projects connected to the local grid. OPALCO utility also sends its green power subscribers an annual report that documents program facts and figures.

Oregon Trail Electric Cooperative—Oregon Trail Electric Cooperative (OTEC), which serves 25,000 members in eastern Oregon, offers a green power option under which customers can purchase 200-kWh blocks of wind power for an additional $3 each month, or 1.5¢/kWh. To supply the program, the co-op has contracted with the Bonneville Power Administration for wind power generated by facilities located in the Pacific Northwest. Participants must enroll for a period of one year.

Otter Tail Power Company—Otter Tail Power, an investor-owned electric utility serving nearly 250,000 customers in Minnesota, North Dakota, and South Dakota, offers its customers an option to purchase wind energy in 100-kWh blocks for an extra $2.60 per month, or a rate premium of 2.6¢/kWh. The green power for the *TailWinds* program is supplied from a single, 900-kW wind turbine located along Buffalo Ridge in southwestern Minnesota. Customers must subscribe for a minimum of one year.

Pacific County PUD #2—Pacific County PUD #2, which serves about 15,000 residents of Pacific County, Washington, offers a green power program through which its residential and business customers can purchase 100-kWh blocks of green power for $1.05 per month, or 1.05¢/kWh. There is no limit to the amount of green power that customers can purchase. The utility purchases the green power from the Bonneville Power Administration. BPA, in turn, gives a portion of the wholesale green power payment to the Bonneville Environmental Foundation to support the development of new renewable energy facilities in the Pacific Northwest.

PNGC Power—PNGC Power, formerly the Pacific Northwest Generating Cooperative, is a not-for-profit, private energy services cooperative owned by 15 electric cooperatives in the Pacific Northwest. PNGC owns and operates the 2.5-MW Coffin-Butte landfill gas generation facility in Benton County, Oregon. While the project output is shared proportionally among the member cooperatives, four Oregon-based members market the landfill-derived power to their customers as a premium green power service. The four utilities are Central Electric Cooperative, Consumers Power, Douglas Electric Cooperative, and Umatilla Electric Cooperative. The green power premiums charged range from 1.8¢/kWh to 2.0¢/kWh.

PacifiCorp—PacifiCorp offers a wind energy tariff in the six western states in which it sells retail electricity as either Pacific Power or Utah Power. Under the *Blue Sky* program, PacifiCorp customers in California, Idaho, Oregon, Utah, Washington, and Wyoming can purchase 100-kWh blocks of electricity from new wind projects for a monthly premium of $1.95 per block or 1.95¢/kWh. Since the inception of the program, PacifiCorp has twice lowered the premium because of the improved economics of wind energy. And in August 2004, Utah Power introduced a variation on the Blue Sky program that provides volume purchase discounts to

commercial customers that purchase more than 10,000 kWh of wind energy each month for at least one year. The wind energy that PacifiCorp sells to its customers is supplied from wind energy projects in the Pacific Northwest. Pacific Power customers in Oregon can also choose from two other green power products offered through the utility by a third-party supplier.

City of Palo Alto Utilities—City of Palo Alto Utilities offers its residential, commercial, and industrial customers a 100% renewable energy product sourced from newly constructed wind turbines located within the western power system and new California-based solar photovoltaic projects. Participating residential customers must sign up to receive 100% of their electricity use as green power while commercial customers can either receive 100% green power or purchase the green power in 1,000-kWh blocks. The additional cost for the green power is 1.5¢/kWh. The city is partnering with 3 Phases Energy Services for the design of the program and procurement of the renewable energy supplies.

Pasadena Water & Power—Pasadena Water & Power (PWP) offers a "green power" option to its approximately 60,000 residential customers. Under the program, customers can purchase newly developed wind energy at a premium of 2.5¢/kWh. The utility signed a long-term agreement with PPM Energy (formerly PacifiCorp Power Marketing) to purchase 6 MW of output from the 150-MW High Winds project located in Solano County, California. PWP is using the wind energy both to supply the green pricing program and to comply with a state law that requires public utilities to develop and implement a renewable portfolio standard.

Peninsula Light Company—Peninsula Light Company (PLC), an electric cooperative serving about 26,000 consumers in Gig Harbor, Washington, offers a program through which member customers can purchase green power in 100-kWh monthly blocks for an additional $2.80, or 2.8¢/kWh. To supply the *Green by Choice* program, PLC will purchase 10 average megawatts (aMW) of *Environmentally Preferred Power* from the Bonneville Power Administration for five years. The power comes from the Foote Creek Rim wind project in Wyoming and the Packwood Lake hydro project in Washington. A portion of the wholesale green power payment goes to the Bonneville Environmental Foundation to support the development of new renewable energy facilities in the Pacific Northwest. In addition, PLC uses 25% of the green power revenue to support environmental education programs and the development of local renewable resources.

Platte River Power Authority—Platte River Power Authority (PRPA) supplies wind power for the green pricing programs of its four municipal utility members in Estes Park, Fort Collins (see above), Longmont, and Loveland, Colorado, as well as to Tri-State G&T and the city of Aspen. PRPA has expanded its Medicine Bow, Wyoming, wind site several times to meet growing customer demand for green power—the site now includes 10 turbines totaling nearly 6 MW of generating capacity.

Portland General Electric—Portland General Electric (PGE) customers have access to three different green power products: *Green Source*, which is a 100% renewable power option sourced from and marketed in partnership with Green Mountain Energy Company and which includes energy from certified low-impact hydropower facilities (25%), geothermal plants at The Geysers in California (25%), and new wind resources in the Pacific Northwest (50%); *Healthy Habitat*, which adds a $2.50 monthly contribution for salmon habitat restoration to the *Green Source*

product; and *PGE Clean Wind*, which consists of wind power from the Pacific Northwest. The pricing for the first two products is 0.8¢/kWh above the basic utility rates, while residential and small commercial customers pay a rate premium of 1.75¢/kWh for the *PGE Clean Wind* product.

Progress Energy—In 2003, the North Carolina Utilities Commission approved a stakeholder-developed plan to offer two green power products to utility customers statewide. The first product is a "mass-market" product consisting of a resource mix of new solar, wind, and methane from biomass that is offered primarily to residential customers at a cost of $4 per 100-kWh block or 4.0¢/kWh. The second product is a "large-volume" product that includes a resource mix of new and existing solar, wind, small hydro, and biomass and is offered to larger-volume customers at a price of $2.50 per 100-kWh block or 2.5¢/kWh. The green power products are offered by all of the state's electric utilities, including Dominion North Carolina Power, Duke Power, Progress Energy, ElectriCities, and North Carolina electric cooperatives. The program is administered by Advanced Energy, a Raleigh-based nonprofit research organization.

PSI Energy—PSI Energy, a subsidiary of Cinergy that serves more than 700,000 retail electricity customers in Indiana, offers its customers the ability to make monthly contributions to a fund to support the development of renewable resources. The revenues collected will be used to purchase green power or to assist the utility's efforts to develop energy generated from environmentally friendly sources. If, after three years, the contributions collected are not sufficient to purchase or develop green power sources, the utility will provide refunds to the participating customers.

Public Service Company of New Mexico—Under the *PNM Sky Blue* program, Public Service Company of New Mexico (PNM) residential and small-business customers can purchase 100-kWh monthly blocks of wind energy for an extra $1.80, or a premium of 1.8¢/kWh. Large businesses can purchase wind energy for up to 90% of their electricity usage at the same rate of 1.8¢/kWh. Power for the program is supplied from the 204-MW New Mexico Wind Energy Center near Fort Sumner, New Mexico. PNM also sells 50 MW of the wind project output to Salt River Project for its *EarthWise Energy* green pricing program.

Puget Sound Energy—Puget Sound Energy (PSE), an investor-owned utility serving more than 900,000 customers in western Washington State, offers its residential and business customers an option to purchase 100-kWh blocks of green power for an extra $2 per month, or a 2.0¢/kWh premium on the regular rate. Participating customers must purchase a minimum of 200 kWh per month. PSE is teaming with the Bonneville Environmental Foundation to supply the program with power from new wind projects and other renewable resources in the Pacific Northwest.

Roseville Electric—Roseville Electric, a municipal utility in northern California, offers its 40,000 customers options to purchase a 50% renewables content product at a premium of 0.5¢/kWh, or a 100% renewables product for an additional 1.0¢/kWh, for all of their electricity needs. The green power is supplied from geothermal and small hydropower resources. In addition, customers can contribute an additional 1.0¢/kWh to a fund used to build new, renewable energy systems, such as PV systems installed on public facilities, within the city.

Sacramento Municipal Utility District—Sacramento Municipal Utility District (SMUD) offers the *Greenergy* program, through which its customers can choose to obtain 50% or 100% of their electricity needs from renewable energy sources for an additional $3 and $6 per month, respectively. The average residential customer uses 748 kWh per month. The power content of the 100% renewables product is 65% biomass and waste, 34% wind energy, and 1% small hydroelectric. The *Greenergy* products are also *Green-e* certified.

SMUD has also operated the *PV Pioneers* program since 1993. In the first phase of the program, customers could pay a $4 flat monthly fee (for 10 years) to have a 2-kW to 4-kW, grid-connected PV system installed on their rooftops. SMUD installed, operated, maintained, and owned the systems, which feed electricity directly into the grid. Under the current program, customers purchase the PV systems, which are sized to meet their household electricity use under a net-metering arrangement. SMUD helps interested customers determine suitable sites and handles the installation.

City of St. Charles—In partnership with ComEd and Community Energy Inc., the City of St. Charles (Illinois) municipal utility offers its residents and businesses the ability to donate a fixed monthly amount to purchase renewable energy certificates from ComEd. The certificates represent the output of local renewable energy projects, including landfill gas and a 51-MW wind project to be constructed just north of Peoria.

Salt River Project—Salt River Project (SRP), a public utility that provides electricity service to 820,000 customers in the Phoenix metropolitan area, offers its customers the *EarthWise Energy* product, which can be purchased in 100-kWh blocks for an additional $3 per month or a premium of 3¢/kWh. The product is supplied from a mix of landfill gas, low-impact hydropower, wind energy and solar photovoltaic projects. In October 2003, SRP entered into a five-year contract to purchase 50 MW of wind power from Public Service Company of New Mexico (PNM); and in March 2004, SRP announced a five-year agreement to purchase 25 MW of geothermal power from plants operating in California's Imperial Valley.

City Public Service of San Antonio—City Public Service of San Antonio (CPS), the municipal electric utility serving more than 550,000 customers in San Antonio, Texas, offers a wind power option to the city's retail electricity customers. The wind energy is available in 100-kWh blocks for an additional $3 per month, or a premium of 3.0¢/kWh. Customers are not contractually bound to the program and can enter or leave the program, or change their purchase levels at any time. The power for the *Windtricity* program comes from the 160.5-MW Desert Sky Wind Project in West Texas, from which CPS purchases the entire output.

Santee Cooper—Santee Cooper, a state-owned electric and water utility in South Carolina, sells green power derived from landfill gas plants to its customers and member utilities for a premium of 3.0¢/kWh, with all program revenues to be reinvested in development of additional renewable resources or facilities. Under the program, residential customers can purchase the green power in 100-kWh blocks, small commercial customers in 200-kWh blocks, and large business customers in blocks of 1,000 kWh. Santee Cooper serves 126,000 direct customers in Horry, Georgetown, and Berkeley counties. The utility also supplies power to 15 of the state’s 20 electric

cooperatives serving 437,000 customers in 38 counties and directly serves 34 industrial customers in 11 counties.

Savannah Electric—Savannah Electric has received approval from the Georgia Public Service Commission to offers its residential and business customers the option to purchase 100-kWh blocks of green power for an additional $6 per month or a premium of 6.0¢/kWh above the standard electricity rate. Monthly minimum purchase requirements are one block for residential customers, three blocks for small nonresidential, 100 blocks for medium nonresidential, and 400 blocks for large nonresidential. The initial supply source for the green power will be landfill gas generation. All participating customers are required to subscribe for a minimum of one year. Savannah Electric serves 320,000 people in a five-county area of Georgia.

Seattle City Light—The municipal utility of the City of Seattle, which serves 340,000 customers, offers its residential and business customers a program through which they can contribute to a utility-managed fund, which is used to support local renewable energy projects, such as solar, wind, and biomass. Residential customers can contribute $3, $7, or $10 extra each month; and nonresidential customers can participate at different contribution levels. As of June 2004, nine small solar demonstration projects were completed in Seattle with additional projects planned. Green Power funds have also supported the development of dairy waste-to-energy and small wind turbine projects in Washington and Oregon.

Snohomish County PUD—Snohomish County PUD offers its 260,000 residential and business customers a voluntary program, *Planet Power*, through which they can purchase 150-kWh blocks of electricity generated from renewable energy sources for an additional $3 per month, or 2.0¢/kWh. Each block represents about 15% of an average residential customer's monthly use. There is no limit on the number of blocks that can be purchased, and customers can enroll or discontinue their participation at any time. The utility has contracted with the Bonneville Environmental Foundation to supply renewable energy certificates representing the output from new wind energy projects in the Pacific Northwest.

Southern Minnesota Municipal Power Agency—Southern Minnesota Municipal Power Agency (SMMPA), the wholesale power supplier for 18 municipal utilities in southern Minnesota, supplies wind energy to its member utilities from two 950-kW wind turbines installed in 2003. Residential and business customers can purchase the wind energy through the member utilities for $1 per 100-kWh block or a premium of 1.0¢/kWh. SMMPA was able to lower the price from an initial premium of 2.9¢/kWh because the cost of power from the turbines was less than expected. The lower costs resulted from a combination of strong winds, the efficiency of the turbines, and the ability to avoid costly transmission charges and losses by siting the turbines close to the distribution lines of Fairmont Public Utilities, which is a SMMPA member.

City Utilities of Springfield—City Utilities of Springfield, Missouri, offers a wind power option to its residential and business customers. Participants can purchase 100-kWh blocks of wind power for $5, or 5¢/kWh and must agree to participate for a minimum of one year. Initially, the wind power was supplied by Westar Energy, which operates a 1.5-MW wind project in Kansas.

Tacoma Power—Tacoma Power, which serves more than 140,000 customers in the state of Washington, offers its customers an option to purchase a blend of low-impact hydro and wind power supplied by the Bonneville Power Administration in partnership with the Bonneville Environmental Foundation. Residential customers can participate by paying an extra $3, $6, or $10 each month. Business customers have additional purchase options. The effective premium charged for the power is 1.5¢/kWh.

City of Tallahassee—The City of Tallahassee municipal utility offers residential and business customers three different products and blends of green power. The *Wind Plus* product is a nationally sourced blend of 55% wind, 25% bioenergy, 15% hydro, and 5% solar, and carries a price premium of 1.85¢/kWh. The *Tallahassee Blend* is a mix from 80% hydropower and 20% solar from local sources and is priced at 2.5¢/kWh above the standard rate. And the *Pure Solar* product is 100% from local or other in-state solar sources with a premium of 11.6¢/kWh. Each product has monthly payment options of $10, $15, or $20. All three products are supplied in partnership with Sterling Planet, a Georgia-based green power marketer.

Tampa Electric Company—Tampa Electric Company (TECO), an investor-owned utility serving more than 500,000 customers on Florida's west coast, offers customers an option to purchase 100-kWh blocks of green power for $5 or a price premium of 5¢/kWh. The power for the program is supplied from a combination of biomass (yard waste and tree trimmings), landfill gas from a Hillsborough county landfill that powers a microturbine, and a photovoltaic solar installation at the Museum of Science and Industry.

Tennessee Valley Authority—The Tennessee Valley Authority (TVA) offers the *Green Power Switch* program through which customers of TVA-supplied distribution companies can purchase 150-kWh blocks of renewable energy for an extra $4 per month, or a premium of about 2.67¢/kWh. Power for the program is supplied from a mix of wind energy, landfill gas, and solar energy from PV systems installed at public facilities throughout the TVA region. TVA is adding 27 MW of wind energy to its Buffalo Mountain wind site in 2004 to provide additional supply for the program. Sixty-seven of TVA's 159 distributors currently offer the program to their customers. The program has also received *Green-e* accreditation from the Center for Resource Solutions.

Traverse City Light & Power—Since 1996, Traverse City (Michigan) has operated a green pricing program for its residential and small commercial customers, selling the output from a 600-kW wind turbine that was constructed on the edge of town. Residential and commercial customers pay a 1.58¢/kWh premium to purchase 100% of their power from wind energy. The municipal utility has not expanded the program and maintains a waiting list of interested customer subscribers.

Tri-State Generation and Transmission Association—Tri-State, a G&T cooperative serving 44 rural electric systems, provides a green power product to its member distribution systems based in Colorado, Wyoming, and Nebraska. Tri-State offers the green power to its member systems in 100-kWh blocks at a rate premium of 2.5¢/kWh. Twenty-one of the 44 members have purchased some amount of green power through the program. The program is supplied by wind energy purchases from Platte River Power Authority and other "green tags" purchases.

Tucson Electric Power Company—Tucson Electric Power Company (TEP), an investor-owned utility serving more than 350,000 customers in southern Arizona, offers its customers an option to purchase 20-kWh blocks of energy tied to the use of landfill methane at the company's Irvington Generating Station. Customers pay $2 (10¢/kWh) per month for the first block purchased and $1.50 (7.5¢/kWh) for all subsequent blocks. The customer funds collected are invested in the construction and operation of solar electric generating facilities in Arizona.

Unisource Energy Services—Unisource Energy Services (UES), an investor-owned utility providing electric service to about 77,000 customers in Arizona, gives customers the option to sponsor one watt (20 kWh) of solar power generation by contributing $2 each month, or 10¢/kWh. Each additional watt or 20-kWh block of green power is priced at $1.50 per month, or 7.5¢/kWh. Proceeds from the *GreenWatts* program will be used to build new solar power projects in communities served by UES. Until UES can establish its own sources of renewable energy, a portion of the customer contributions will be used to purchase green power "credits," or renewable energy certificates, from other sources.

Vigilante Electric Cooperative—Vigilante Electric Cooperative, which provides electricity service to about 4,500 members in nine southwestern Montana counties, offers its residential and nonresidential customers an option to purchase 100-kWh blocks of green power for an extra $1.10 each month, or to meet their entire monthly electricity use with green power at the same premium of 1.1¢/kWh. The green power is supplied by the Bonneville Power Administration from wind, hydro, and solar projects in Oregon, Washington, and Wyoming.

Wabash Valley Power Association—Wabash Valley, a G&T cooperative serving 24 member distribution systems in Indiana, Michigan, and Ohio, offers customers of its cooperatives the option to purchase green power generated from landfill gas facilities. The distribution companies participating in the program are offering the green power at price premiums ranging from 0.5¢/kWh to 1.0¢/kWh.

Waverly Light and Power—Waverly Light and Power, a municipal utility serving 4,300 customers in Waverly, Iowa, gives its customers the opportunity to contribute monthly amounts on their utility bills to help build renewable resources for the city. Waverly currently owns three wind turbines and operates three hydro generators on the Cedar River to make up 5% of its total generation. The utility also sells a renewable energy certificate product, *Iowa Energy Tags*, in 2,500 kWh denominations for $50, or 2¢/kWh. The tags represent the environmental benefit of the power generated from the three Waverly-owned wind turbines. The proceeds from the tag sales go toward additional wind generation by Waverly Light and Power.

We Energies—Since 1996, We Energies, formerly Wisconsin Electric, has offered an optional renewable electricity service under which its customers can choose to receive 25%, 50%, or 100% of their power from renewable energy sources at a premium of 2.04¢/kWh. The renewable energy supply is a mix of wind energy, small hydropower, and landfill-gas generation. The program has received *Green-e* accreditation from the Center for Resource Solutions.

Western Farmers Electric Cooperative—Western Farmers Electric Cooperative, an Oklahoma-based generation and transmission cooperative, offers a wind energy option to approximately 400,000 retail customers in the state through its 19 distribution cooperatives. Under the *WindWorks* program, the co-ops offer wind energy certificates to residential and commercial customers in 100-kWh monthly blocks for $0.50 each, or a price premium of 0.5¢/kWh. There is no minimum period of enrollment. The certificates are supplied from the 74.25-MW Blue Canyon wind energy project located in southwestern Oklahoma.

Wisconsin Public Power Inc.—Wisconsin Public Power Inc. (WPPI), which supplies wholesale power to 32 municipal utilities in Wisconsin, offers a green energy option to retail customers of participating distribution utilities. Residential and business customers can purchase 150-kWh blocks of green power for $3 a month, or 2¢/kWh. The power comes from a mix of wind energy, low-impact hydropower, and small, local digester gas facilities. WPPI owns two wind turbines near Worthington, Minnesota, with a combined generating capacity of 1.8 MW, the output of which has been fully subscribed by the program. In July 2004, WPPI signed a 20-year agreement to purchase 20 MW wind energy from a new project to be built near Waupun, Wisconsin, that will provide additional wind energy for its program.

Wisconsin Public Service Corporation—Wisconsin Public Service (WPS) offers two green power programs to its more than 400,000 customers in northeastern and central Wisconsin. Under the *SolarWise for Schools* program, WPS customers can make tax-deductible donations that are used to purchase and install solar-electric systems on local high schools. The schools receive the solar-electric systems and save money on their electric bills, and also receive a renewable energy curriculum. The utility also offers the *NatureWise* program, under which customers can purchase 100-kWh blocks of green power for $2.65, or 2.65¢/kWh. The power is supplied from a combination of Wisconsin-based wind turbines and generation systems utilizing methane from landfill and farm waste resources. The tariff program has received *Green-e* accreditation from the Center for Resource Solutions

Xcel Energy—In 1993, Xcel Energy established a green pricing contribution program for its Colorado-based customers. Through the *Renewable Energy Trust*, customers could either make fixed contributions or use a bill "roundup" option to support utility investments in renewable energy. Through the trust, Xcel has deployed more than 60 PV projects, including 40 kW of off-grid PV systems and more than 60 kW of school-based systems.

In 1997, Xcel introduced the *Windsource* program in Colorado, which offers customers an option to purchase 100-kWh blocks of wind energy for $2.50 per month or a rate premium of 2.5¢/kWh. Customers can also receive their entire monthly electricity consumption from wind energy. Colorado-based *Windsource* customers receive some protection from fuel price increases such that the effective wind premium is currently about 1.3¢/kWh. Because of growing customer demand over time, Xcel has expanded its Colorado-based wind energy supply to more than 60 MW, from which it also supplies a number of other utility programs.

Xcel has also installed 2-MW of wind to serve its New Mexico-based customers. The wind power is being sold as an optional service at a premium of $3 per 100-kWh block, or 3¢/kWh.

Customers can purchase as few or as many blocks of wind energy as they want, up to their total monthly consumption.

And, in early 2003, Xcel launched the *Windsource* program for its 1.1 million Minnesota-based customers, giving these customers the option to purchase 100-kWh blocks of wind power for $2 each, or a premium of 2¢/kWh. Xcel supplies the program primarily from small wind power projects in Minnesota.

Yampa Valley Electric Association—Yampa Valley, which serves Steamboat Springs and several other cities in northwestern Colorado, offers its customers the opportunity to purchase 100-kWh blocks of wind power for 3¢/kWh. Yampa Valley sources the supply from Xcel Energy's Ponnequin wind site in northern Colorado.

Competitive Green Power and Renewable Energy Certificate Marketing

Green power marketing refers to the sale of green power in competitive markets, where multiple suppliers and service offerings generally exist. Currently, about 20 marketers offer green power products to retail customers in 10 states—California, Maine, Maryland, Massachusetts, New Jersey, New York, Pennsylvania, Rhode Island, Texas, and Virginia as well as Washington, D.C. (for a summary of retail green power products, see **Table A-3**).

Renewable energy certificates (RECs)—also known as green tags or tradable renewable certificates (TRCs)—represent the unique attributes of electricity generated from renewable energy sources and are often sold separately from the commodity electricity. For a summary of retail REC products, see **Table A-4**.

This section presents information on retail green power marketers and REC suppliers, utility/marketer partnerships, and wholesale green power providers.

Retail Green Power and REC Marketers

1st Rochdale Cooperative—1st Rochdale Cooperative offers a fixed-price green power option to electricity customers in Con Edison's service territory in New York City and Westchester County. The product, called *Sterling Green*, is supplied from in-state renewable energy sources, including new wind (40%), small hydro (30%), and methane from landfills or animal wastes (30%). Customers can purchase the green power at a fixed price of 14.4¢/kWh—a 1.5¢/kWh premium above the cooperative's standard electricity rate of 12.9¢/kWh—for one year from the time of enrollment. Participating customers receive a separate bill from 1st Rochdale. The product is supplied by Sterling Planet and certified by Environmental Resources Trust.

3 Phases Energy Services—3 Phases is a registered energy service provider in California, where it markets power generated from existing and new renewable energy sources to residential and business customers under its *Green Direct* program. The company also offers green certificates supplied from new wind resources for approximately 2¢/kWh. The certificates can be purchased on a monthly or annual basis. The company's Web site includes an "environmental footprint calculator," which helps potential customers calculate the number of certificates that would be required to offset the carbon emissions associated with an individual's annual household energy use and transportation requirements. 3 Phases supplies RECs to a number of large nonresidential customers, including the U.S. Environmental Protection Agency (EPA), Kinko's, and Lundberg Family Farms. The company also supplies renewable energy and marketing services for green pricing programs offered by PacifiCorp and the City of Palo Alto.

Agway Energy Products—Agway Energy Products, a Syracuse, New York-based company that provides heating oil, natural gas, and other energy services, offers green power to homeowners and small businesses in the Niagara Mohawk and NYSEG electric service territories in partnership with Sterling Planet. The companies are offering a *Green-e* certified product called *Sterling Green*—a blend of 40% new wind, 30% small hydroelectric, and 30% methane gas

derived from renewable sources. Customers choosing the green power product pay 1.5¢/kWh more than Agway's variable rate for electricity.

Bonneville Environmental Foundation—Bonneville Environmental Foundation (BEF,) an independent nonprofit foundation established in 1998 by regional environmental groups and the Bonneville Power Administration, markets green tags sourced from renewable energy projects in the Pacific Northwest. The revenues generated from the certificate sales are used to fund projects that restore damaged watersheds and support new renewable energy projects utilizing solar, wind, and biomass resources. Through its Web site, BEF offers green tags supplied from new wind (~98%), new solar, and new biomass in one-MWh increments for $20, or a price premium of 2¢/kWh. It also wholesales green tags to a number of utilities in the West and to a variety of large nonresidential customers, including White Wave and Interface Fabrics Group. In 2002, BEF sold more than $700,000 worth of green tags, representing the annual energy output of approximately 35 large utility-scale wind turbines. Along with new wind energy resources, BEF funds have supported the development of about 150 kW of solar energy projects in the region.

CET & Conservation Services Group—The Center for Ecological Technology (CET) and Conservation Services Group (CSG) have teamed to participate in the *GreenUp* program offered by Massachusetts Electric and Nantucket Electric (see **Utility/Marketer Partnerships**). The companies are offering a product called *GreenerWatts New England,* which is supplied from a blend of small hydro, biomass, wind, and solar resources at a premium of 1.9¢/kWh. CSG also participates in the *GreenUp* program offered by Narragansett Electric in Rhode Island, where it offers a similar product. CET and CSG have also entered into an agreement to market electricity from a new, 30-MW wind project planned for the Berkshire Mountains in Massachusetts. The Hoosac Wind Power Project, which is being developed by EnXco, is expected to be operational by the end of 2004.

Community Energy Inc.—Community Energy Inc. (CEI) is a Pennsylvania-based, for-profit corporation that markets wind energy certificates in New York and several Mid-Atlantic states. CEI builds customer demand to support identified wind energy projects in the customer's region and contracts for the supply under long-term arrangements with wind developers and other suppliers.

CEI has teamed with a variety of utilities and marketers to offer its *New Wind Energy* products to retail customers in the Northeast (see **Utility/Marketer Partnerships**). The company participates in National Grid's *GreenUp* renewable energy program in New York and Massachusetts, as well as Rhode Island and Long Island Power Authority's *LIPA Green Choice Program,* through which it offers 100% wind energy products and wind energy blends. In New York, CEI has teamed with utilities NYSEG and Rochester Gas & Electric to offer 100-kWh blocks of new wind energy supplied from in-state wind projects. In Pennsylvania, CEI teams with PECO Energy to offer wind energy blocks supplied from Pennsylvania-based wind projects. In addition, Community Energy markets wind energy to customers in New York City, Philadelphia, and the Washington, D.C., area through cooperative marketing agreements with ConEdison Solutions, the Energy Cooperative Association of Pennsylvania, and Washington Gas Energy Services. The company also acts as a wholesale supplier. As of April 2004, CEI and its partners collectively served more than 20,000 customers and reported annual wind energy sales

of 350 million kWh. Its marketing partnerships have supported the development of about 190 MW of new wind generation in the region.

ConEdison Solutions—ConEdison Solutions, an unregulated subsidiary of Consolidated Edison that provides electricity service to residential and small business customers in the New York City region, teams with Community Energy Inc. to offer green power. The ConEdison Solutions *GREEN Power* product is a *Green-e* certified blend of New York-based wind (25%) and hydropower (75%) offered at a premium of 0.5¢/kWh compared to the company's standard electricity rate. The power is supplied from the 30-MW Fenner Windpower Project and small, run-of-the-river hydropower facilities. The offering is available to all residential customers in the ConEdison and Orange and Rockland service territories. It also offers a nonresidential wind energy offering in conjunction with Community Energy that is priced according to the volume purchased.

Constellation NewEnergy—Working in conjunction with Maine PowerOptions, a not-for-profit consortium that serves as an aggregator for the state's governmental and nonprofit organizations, Constellation NewEnergy has contracted to supply renewable energy to a number of facilities in Maine. It also supplies *Green-e* certified renewable energy to nonresidential customers in the Northeast, including the General Services Administration. Along with other marketers, Constellation NewEnergy has agreed to market electricity from the 30-MW Hoosac Wind Power Project planned for the Berkshire Mountains in Massachusetts.

Constellation NewEnergy partners with the Environmental Resources Trust (ERT)—a green power certifier—to offer *EcoPower Certificates* to nonresidential customers in Illinois. The certificates are supplied from existing (60%) and new (40%) landfill-methane facilities. The company also supplies certificates to the state of Illinois, which has committed to purchase green power to meet at least 5% of the state government's electricity needs.

EAD Environmental—EAD Environmental is a New York City-based marketer of renewable energy certificates and greenhouse gas credits; the RECs are *Green-e* certified and marketed via the Internet in 500-kWh blocks for $7.50 or 1.5¢/kWh. The company is a subsidiary of Natsource, a broker of emissions credits and renewable energy certificates serving wholesale markets. It supplies green power to a number of nonresidential customers, including Connecticut College, Harvard, and the University of Southern Maine.

electricAmerica (formerly Commonwealth Energy)—electricAmerica provides electricity service supplied wholly or in part from renewable sources in Pennsylvania and California. The company offers a small hydropower product in the PECO Energy service territory at a 0.39¢/kWh premium over standard-offer rates. In California, electricAmerica continues to serve some customers with renewable energy, although many customers switched to standard electricity service when the California Energy Commission terminated its customer incentive program in early 2003.

Energy Cooperative of New York— Energy Cooperative of New York (ECNY), a Buffalo-based nonprofit organization, offers a green power option to residential electric customers in the Niagara Mohawk service territory. The renewable energy for the product is sourced from wind

(20%) and landfill gas (80%) generation facilities within New York state. ECNY customers pay a premium of about 1¢/kWh for the green power but save about 0.5¢/kWh by switching to ECNY service. The green power charge appears on the customer's regular Niagara Mohawk bill.

Energy Cooperative Association of Pennsylvania—Energy Cooperative Association of Pennsylvania (ECAP), a 20-year-old, Philadelphia-based fuel oil cooperative, offers a *Green-e* certified product to its members. The *EcoChoice 100* renewable energy product consists of nearly 90% biomass power, 10% new wind energy, and a small fraction of solar. ECAP purchases the solar energy from members who own photovoltaic systems. ECAP's green power product is available only in the PECO service territory and, as of June 2004, is sold at 7.25¢/kWh—a price premium of about 1.08¢/kWh above the utility "price-to-compare." ECAP also offers its members a wind power option in collaboration with Community Energy. The product, called *New Wind Energy,* is sold in 100-kWh blocks at an extra cost of $2.50 per block or 2.5¢/kWh.

EnviroGen—Based in Buffalo, New York, EnviroGen participates in the both the Niagara Mohawk *GreenUp* program and the Long Island Power Authority *LIPA Green Choice Program* (see **Utility/Marketer Partnerships**). In both programs, the company offers a product supplied from a blend of 75% biomass and 25% hydro resources at a premium of 1.0¢/kWh.

Green Mountain Energy Company—Based in Austin, Texas, Green Mountain Energy Company serves about 600,000 customers in California, New Jersey, New York, Ohio, Oregon, Pennsylvania, and Texas with its brand of products. Green Mountain offers a 100% wind energy product in Texas; but, in most other states, the company markets renewable energy blends from sources such as landfill gas, small hydro, wind, and solar. In Ohio, Green Mountain serves a number of municipal aggregation groups with electricity generated primarily from natural gas facilities, with a small percentage from renewable sources (2%). The company also offers *Green-e* certified RECs products to commercial customers nationally. The products are supplied from wind and landfill gas resources, or blends of other renewable resources. In addition, the company administers and markets green power products offered through utilities in Florida, Ohio, Oregon, and New York.

Green Mountain's market activities have resulted in the development of more than 170 MW of new renewable energy projects, including a 160-MW wind project in west Texas, wind projects in California and Pennsylvania, and commercial-scale photovoltaic systems in most of the states in which the company operates. Green Mountain has financial backing from Nuon (one of the largest electric utilities in the Netherlands) and BP Amoco.

Maine Interfaith Power & Light—Maine Interfaith Power & Light (MeIPL) markets three green power products to electricity customers in Maine. The first product is a blend of power from existing small hydropower facilities (50% or more) and wood-fired generators in the state supplied by Maine Renewable Energy. The product is offered at a premium of about 1.5¢/kWh above the standard-offer rate charged in most parts of the state. Customers that choose this option must switch from their current electricity supplier. The organization sets aside a minimum of 20% of its revenues from the sale of green power to support the development of new, clean power sources in Maine, such as solar electric systems installed on local churches.

Under the second option, customers can purchase "green tags" from the Bonneville Environmental Foundation in increments of 1,000 kWh at a premium of 2¢/kWh. The green tags represent the environmental attributes of power generated from new solar and wind facilities in the Pacific Northwest. When purchasing this option, customers are not required to switch electricity providers or enter into long-term service contracts. A third option, *First Wind of Maine Tags*, under which customers could purchase tags from a 50-kW wind turbine in Orland, Maine, at a premium of 4¢/kWh, has been fully subscribed.

Mainstay Energy—Chicago-based Mainstay Energy is offering three *Green-e* certified products under its *Fossil Free* brand name to commercial and residential customers nationwide. The three options are 100% renewable energy for 2.0¢/kWh, 100% wind energy for 2.5¢/kWh, and 100% solar energy for 20.0¢/kWh, with all products supplied from smaller-scale renewable energy projects. Mainstay also operates as a wholesale RECs marketer.

Mass Energy Consumers Alliance—Mass Energy participates in the National Grid *GreenUp* program in Massachusetts (see **Utility/Marketer Partnerships**). Under the program, the company offers two products that meet either 50% or 100% of a customer's electricity needs with renewable energy sources, at premiums of 1.25¢/kWh and 2.5¢/kWh, respectively. Both products are supplied from a blend of small hydro, biomass, wind, and solar resources. Mass Energy also offers a renewable energy certificate product called *New England Wind*, which is available to customers throughout New England. The product is sold in 2-MWh blocks at a cost of $100, or a premium of 5¢/kWh. Customers purchasing *New England Wind* do not switch electricity providers but continue to pay their standard monthly electricity bill. Mass Energy supplies the product from a 660-kW wind turbine located in Hull, Massachusetts.

National Energy and Gas Transmission—Formerly PG&E National Energy Group, National Energy and Gas Transmission sells wind energy certificates representing the environmental attributes of the output from its 11.5-MW project in Madison County, New York. In April 2003, Green Mountain Energy Company announced that it purchased nearly all of the environmental attributes associated with the Madison project generation through 2004.

***Native*Energy**—*Native*Energy offers a program that enables individuals and businesses to support new wind farm construction through the advance purchase of long-term streams of renewable energy credits, including the associated carbon dioxide (CO_2) offsets. The *Native*Energy program has directly supported the development of a 750-kW wind turbine on the Rosebud Sioux Indian Reservation in South Dakota and is assisting the development of a 10-MW wind project on the reservation, as well as farm-based methane projects in Pennsylvania and Vermont.

Pepco Energy Services—Pepco Energy Services, an unregulated subsidiary of Potomac Electric Power Company, offers green power to customers in some areas of Maryland, Pennsylvania, Virginia, and Washington, D.C. Customers can choose from the company's 10%, 51%, or 100% renewable energy options, which are supplied primarily from biomass sources, such as landfill gas. The company also offers 51% and 100% wind energy options supplied from new wind energy projects in the region. Pepco Energy Services serves a number of large accounts

including the state of New Jersey, the Tower Companies, and the U.S. Department of Energy (DOE). In early 2003, the company announced plans to build and operate a new 2-MW landfill gas generating facility at the Warrenton, Virginia, landfill to supply its customers in Virginia and surrounding areas.

QVINTA Inc.—In June 2004, QVINTA Inc. entered into a three-year agreement with the U.S. EPA to supply 2.35 million kWh of RECs for EPA's Duluth, Minnesota, laboratory sourced from wind facilities located in Dodge Center, Minnesota.

Reliant Energy—Reliant Energy offers a 100% wind energy option to residential customers in Texas. In the TXU service territory, the product is offered to residential customers at 10.4¢/kWh compared to the standard-offer service price of 10.98¢/kWh. The wind energy is supplied from new, in-state wind projects.

Renewable Choice Energy—Renewable Choice Energy (RCE), based in Boulder, Colorado, offers a RECs-based wind energy product called *American Wind*, which is available to consumers nationwide. The product is supplied from a variety of new wind energy projects in the United States. The company uses grassroots marketing – including direct sales and community events – to sell its products.

Select Energy—As the competitive energy marketing and services arm of Northeast Utilities, Select Energy has expanded its retail energy product portfolio to include environmentally friendly power choices for business and institutional customers in the Northeast. The company signed a three-year contract with the U.S. General Services Administration (GSA) to supply wind energy at a premium of 1.75¢/kWh to meet the electricity needs of two GSA buildings in New York. Select Energy is procuring the wind energy from the Fenner Windpower Project in New York under a wholesale supply agreement with Community Energy.

Sterling Planet—Sterling Planet, a green power marketer based in Roswell, Georgia, participates in the National Grid *GreenUp* program in Massachusetts, New York, and Rhode Island (see **Utility/Marketer Partnerships**). The company offers blends of small hydro, biomass, wind, and solar ranging from 1.2¢/kWh to 2.2¢/kWh. Sterling Planet also offers a *Green-e* certified 100% renewable energy certificate product to residential and business customers nationwide. The RECs are obtained from a number of different sources throughout the United States, encompassing the use of solar, wind, low-impact hydropower, biomass, and geothermal resources. The average price of the RECs is 1.6¢/kWh. Sterling Planet has entered into contracts to supply RECs to a number of large, nonresidential customers, including the U.S. EPA and Fortune 500 companies that participate in the Green Power Market Development Group.

Sterling Planet also partners with Agway Energy Products and 1st Rochdale to offer green power to homeowners and small businesses in New York. It has also developed green power marketing partnerships with several utility companies, including the City of Tallahassee and JEA.

Strategic Energy—A Pittsburgh-based competitive electricity supplier, Strategic Energy LLC provides green power for 12 Office Depot retail stores and warehouses in California. Under the

two-year contract, Strategic Energy will supply approximately 12 million kWh of electricity annually, generated from landfill gas. In addition, Strategic Energy has a multiyear agreement with Kinko's to provide approximately 1.6 million kWh of wind energy annually to meet a portion of the electricity needs of 57 retail stores in Texas. Strategic Energy was able to offer cost savings on the nonrenewable portion of the contract to offset the additional cost of the wind power.

Sun Power Electric—Sun Power Electric, a division of the nonprofit Conservation Services Group, sells a *Green-e* certified TRC product to consumers in the northeastern United States. The *Regen* product (which is derived from a mix of 1% solar and 99% landfill methane) is sold in annual blocks of 2,000 kWh, roughly equivalent to 20% of the annual electricity use of the average New England home, at a premium of 3.6¢/kWh. The company has teamed with Shaw's Supermarkets, a New England-based grocery chain, to sell *Regen* in three Shaw's stores. The company also provides TRCs at wholesale to Green Mountain Energy Company.

TXU Energy—TXU Energy, a utility serving 2.7 million electric customers in Texas, has a two-year agreement with Dyess Air Force Base in Abilene, Texas, to supply approximately 78 million kilowatt-hours of wind power each year to meet all the electricity requirements of the base.

Washington Gas Energy Services—An affiliate of Washington Gas, Washington Gas Energy Services (WGES) partners with Community Energy to offer wind energy to capital-area businesses and residents at a 2.5¢/kWh premium. The power is supplied from the 66-MW Mountaineer Wind Energy Center in West Virginia, which began operating in December 2002. Exelon Power Team holds a 20-year power purchase agreement for the output of the project. As of February 2003, WGES reported that it was serving about 5,000 residential and small, commercial customers in the Washington, D.C., area with about 3.3 MW of wind energy generation.

Waverly Light and Power—Waverly Light and Power (WL&P), a municipal electric utility serving 4,300 customers in Waverly, Iowa, sells wind energy certificates representing the environmental attributes of the output of three utility-owned and operated wind turbines—an 80-kW turbine north of Waverly and two 750-kW turbines near Alta, Iowa. The certificates are sold in 2,500-kWh blocks for $50, or 2.0¢/kWh. According to the utility, revenues from the certificate sales will be used to develop additional wind energy projects.

WindCurrent—Based in Baltimore, Maryland, WindCurrent offers a *Green-e* certified product called *Chesapeake WindCurrent* to customers in the Washington, D.C., area. Customers can purchase the green power to meet 25%, 50%, 75%, or 100% of their electricity needs at a premium of 2.5¢/kWh, or purchase 150-kWh blocks for 3¢/kWh. The product is currently supplied from the Mountaineer Wind Energy Center in West Virginia. In the future, wind power projects planned for Maryland and Virginia may be added to the resource mix.

Utility/Marketer Partnerships

Long Island Power Authority—Long Island Power Authority (LIPA) provides green power options for the nearly 1.1 million electricity customers that it serves on Long Island. Under its *LIPA Green Choice Program*, retail customers can purchase green power in the form of renewable energy certificates directly from participating green power marketers. Currently, three marketers—Community Energy, EnviroGen, and Sterling Planet—offer renewable energy blends or a 100% wind energy option ranging from 1¢/kWh to 2¢/kWh above standard electricity costs. Participating customers receive a single bill from LIPA reflecting both standard electricity charges and the incremental charge for the green power.

Massachusetts Electric Company and Nantucket Electric Company—In the fall of 2003, National Grid expanded its *GreenUp* program and began offering green power options to customers of its electric distribution subsidiaries in Massachusetts. Currently, customers of Massachusetts Electric Company and Nantucket Electric Company can purchase products offered by four different green power suppliers: CET & Conservation Services Group, Community Energy, Mass Energy, and Sterling Planet. The products are blends of power from new and existing renewable energy resources and range from 0.95¢/kWh to 2.5¢/kWh above a customer's standard electricity rate. Five of the eight products are *Green-e* certified.

Narragansett Electric—In March 2004, National Grid expanded its *GreenUp* program to customers of Narragansett Electric, a subsidiary company that serves 465,000 electricity customers in Rhode Island. Under the program, customers can purchase green power from one of four participating green power marketers: Community Energy Inc., Conservation Services Group, People's Power & Light, and Sterling Planet. The product options range from 0.75¢/kWh to 2.0¢/kWh above the cost of standard service and consist of renewable energy supplied from a variety of sources, such as wind, small hydro, biomass, and solar. Participating customers do not switch from their existing utility service but see a green power surcharge on their regular bills.

New York State Electric and Gas—New York State Electric and Gas (NYSEG), an electric utility that serves about 830,000 electricity customers in upstate New York, has teamed with Community Energy to offer wind energy to its residential customers. The *New Wind Energy* product is available in 100-kWh blocks at a cost of $2.50 per block monthly. Customers must purchase a minimum of two blocks. The power is supplied from the 30-MW Fenner Windpower Project, which is about 40 miles southeast of Syracuse.

Niagara Mohawk—In 2002, Niagara Mohawk, a National Grid subsidiary that serves 1.5 million electricity customers in upstate New York, introduced a program through which its residential and commercial customers could purchase electricity generated from renewable energy sources offered by third-party providers. The *GreenUp* renewable energy program was developed as a result of the settlement agreement reached in the Niagara Mohawk-National Grid merger. Under the program, participating customers do not switch from their regular utility service, but see a line item for a green power surcharge on their utility bills. Customers can choose to purchase green power products offered by four providers: Community Energy Inc., EnviroGen, Green Mountain Energy Company, and Sterling Planet. The products are blends of

power from new and existing renewable energy resources and range from 1¢/kWh to 2.5¢/kWh above a customer's standard electricity rate.

PECO Energy—In May 2004, PECO Energy, a subsidiary of Exelon Corporation that serves 1.5 million electric customers in southeastern Pennsylvania, began offering a wind energy product to its residential and business customers. Customers can purchase *PECO WIND* in 100-kWh blocks monthly for an additional charge of $2.54 per block (2.54¢/kWh), or can choose to receive 100% of their electricity from wind energy. The extra charge for the wind energy is added directly to the utility bills of participating customers. The wind energy is supplied by Community Energy Inc. from several Pennsylvania-based wind projects, including Mill Run (15 MW), Somerset (9 MW), and Waymart (60 MW).

Rochester Gas & Electric—Rochester Gas & Electric (RG&E), a utility distribution subsidiary of Energy East Corporation that serves 350,000 electricity customers in upstate New York, is teaming with Community Energy Inc. to offer its customers the option of purchasing electricity generated from new in-state wind energy sources. Under its *Catch the Wind* program, customers can purchase 100-kWh blocks of wind energy monthly for an extra $2 to $2.50 (2¢/kWh to 2.5¢/kWh), depending on the number of blocks purchased. The minimum purchase is two blocks per month, which is equivalent to one-third of an average residential customer's electricity use. The extra charge for the wind energy will be added to the regular electricity bill of participating customers.

Selected Wholesale Marketers

A variety of companies and generators supply green power or RECs in wholesale markets. Some of the more prominent wholesale marketers are listed below, as well as other supplier entities that have explicitly stated their intent to market the output of renewable energy generating projects in voluntary purchase markets.

Aquila—Aquila offers *Green-e* certified "tradable renewable energy credits" to retail marketers and commercial and industrial customers. The certificates are supplied from the company's 110-MW Gray County (Kansas) Wind Farm, which was completed at the end of 2001.

Basin Electric Power Cooperative—Basin Electric, a regional power cooperative that generates and transmits electricity to 124 member rural electric systems in nine Midwestern states, markets RECs from two new 40-MW wind energy projects in North Dakota and South Dakota. Basin also supplies green power—marketed under the *Prairie Winds* product name—to 49 distribution cooperatives.

Bonneville Power Administration— Bonneville Power Administration (BPA), a federal energy marketer with headquarters in Portland, Oregon, supplies green power to a number of utilities and large, nonresidential customers, primarily in the Pacific Northwest. BPA purchases the output of approximately 180 MW of wind energy from the Condon, Klondike, and Stateline projects in the Pacific Northwest; and the Foote Creek Rim project in Wyoming. It also partners with the Bonneville Environmental Foundation to market "green tags."

Calpine Corporation—Calpine, headquartered in San Jose, California, supplies utilities and power marketers with green power or RECs from its California-based geothermal power projects.

Endless Energy Corporation—Endless Energy, a Maine-based wind energy developer, has entered into an agreement with the College of the Atlantic of Bar Harbor, Maine, to supply wind energy from the Redington Wind Farm, which is planned for completion in 2005. The college has made a 20-year commitment to purchase wind energy for 100% of its electricity needs.

Exelon—Exelon has long-term power purchase agreements for the output of four wind projects in Pennsylvania and West Virginia, with a combined capacity exceeding 175 MW. The company has an agreement with Community Energy to market the output to customers throughout the region.

Missouri River Energy Services—Missouri River Energy Services (MRES)—a joint-action agency providing wholesale power to 56 member municipal utilities in Iowa, Minnesota, North Dakota, and South Dakota—provides wind energy to its member utilities from four wind turbines (with a combined capacity of 3.7 MW) located outside of Worthington, Minnesota. MRES also makes "green tags" available to nonmember municipal utilities interested in developing green pricing programs for their customers. The green tags are $2.50 per 100 kWh or 2.5¢/kWh

Mainstay Energy—Chicago-based Mainstay Energy purchases and aggregates RECs from small, customer-owned renewable energy systems, and markets them nationwide.

National Energy and Gas Transmission—Formerly PG&E National Energy Group, National Energy and Gas Transmission sells wind energy certificates representing the attributes of the output from its 11.5-MW project in Madison County, New York.

Navitas Energy—Navitas Energy, which is majority-owned by Gamesa (a Spanish renewable energy company), has contracted to sell the output of its 50.4-MW Mendota Hills wind project in Illinois to the city of Chicago.

Nebraska Public Power District—Nebraska Public Power District (NPPD) plans to construct a new 60-MW wind project near Ainsworth, Nebraska. A portion of the output will be sold to other public utilities as wholesale wind energy and RECs.

PPL Corporation—PPL Corporation has signed a 20-year agreement for Community Energy to purchase the output of the 20-MW Bear Creek Wind Power Project, which is under development in the Wilkes-Barre/Scranton area in Northeast Pennsylvania. Community Energy will market the project output in the form of wind energy certificates to customers in the mid-Atlantic region.

PPM Energy—PPM Energy, a nonregulated subsidiary of ScottishPower, markets the output from a number of wind energy projects in the West, including the 300-MW Stateline project wind plant on the Washington-Oregon border, the 144-MW Unita County wind project in

Wyoming, and the 24-MW Klondike project in Oregon. PPM is a *Green-e* certified TRC marketer.

Sun Power Electric—Sun Power Electric, a division of the nonprofit Conservation Services Group, provides TRCs from solar energy projects in the Northeast at wholesale to Green Mountain Energy Company.

Vision Quest—A division of TransAlta Energy Corporation based in Calgary, Alberta, Canada, Vision Quest has entered into a two-year agreement with the Bonneville Environmental Foundation to supply "Green Tags" created from wind projects that it owns and operates at various locations throughout Canada. Vision Quest facilities and products are certified both in Canada and by the *Green-e* program in the United States. BEF plans to offer the "Green Tags" to businesses and utilities in both countries, opening up the market for cross-border sales of renewable energy. Vision Quest currently operates about 120 MW of wind facilities.

Certificate Brokers

Cantor Environmental Brokerage—Cantor Fitzgerald is a financial services firm with operating units involved in a variety of market-based business initiatives, including energy and environmental brokerage, such as RECs and CO_2 emissions trading.

Emissions Credit Brokers— Emissions Credit Brokers is a domestic broker of emissions credits and renewable energy certificates.

Evolution Markets—Evolution Markets is an emissions and coal brokerage firm based in White Plains, New York, which has been approved as a broker of *Green-e* certified TRCs. The company also manages an Internet-based bulletin board for TRCs, which provides a venue for wholesale buyers and sellers to post bids and offers for renewable energy attributes and green power.

GFI Group—GFI Group, with offices in New York City and internationally**,** is a brokerage and financial services firm specializing in financial and commodity markets, including emissions trading and RECs.

GT Energy—GT Energy is an international environmental brokerage that is active in both U.S. and European renewable energy markets.

Natsource LLC—Natsource, based in New York City, is an international broker of emissions credits and renewable energy certificates.

Selected Green Power Customers

Because polls and surveys show that individual consumers place a high value on environmental protection and the use of cleaner energy sources, early green power marketing efforts focused primarily on residential customers. More recently, green power providers have focused marketing efforts on nonresidential customers. Once thought to be too price sensitive to be willing to pay more for green power, businesses recognize that green power purchasing can help meet corporate goals related to environmental improvement and sustainable business practices. Larger customers are also more economical for marketers to serve than many small customers.

This section highlights green power purchasing by selected nonresidential customers. In addition to business customers, green power purchasers include municipalities, government agencies, and other organizations. In the federal sector, green power purchases are being encouraged by a 1999 Presidential Executive Order, which calls for federal agencies to expand the use of renewable energy within facilities.

Businesses

Advanced Micro Devices—Advanced Micro Devices (AMD), a leading supplier of personal computer processors and memory, doubled its purchase of renewable energy from Austin Energy's *GreenChoice* program in May 2002. AMD purchases 24 million kWh of renewable energy annually or enough to power 2,000 average Austin homes year-round.

American Psychological Association—The American Psychological Association (APA) purchases green power equal to 75% of the annual electricity consumption of its two Capitol Hill office buildings. Under an agreement announced in August 2003, Green Mountain Energy Company is supplying the green power as renewable energy certificates (RECs) derived from wind energy and other renewable resources. The green power purchase amounts to more than 20 million kWh during a 19-month period.

Austin Independent School District—In October 2003, the Austin Independent School District entered into an agreement with Austin Energy to purchase 45 million kWh of green power annually, or enough to meet 30% of its annual electricity needs. According to the school district superintendent, the purchase is a "wise investment for Austin schools" because the price of the green energy is fixed through 2011 under Austin Energy's *Green Choice* program. During 2000 and 2001, the district was forced to double its utility budget as a result of increases in the price of natural gas.

Ben & Jerry's—In August 2002, Ben & Jerry's announced that it would offset a year's worth of carbon dioxide (CO_2) emissions from its Vermont ice cream production facilities by supporting the construction of a new 750-kW wind turbine on Native American lands in South Dakota. Through its participation in *Native*Energy's *Wind*Builders Business Partner program, Ben & Jerry's purchased renewable energy credits equivalent to 4.5 million kWh of wind energy generated during the life of the Rosebud Sioux Tribe wind turbine. The purchase offsets approximately 5,000 tons of CO_2.

Clif Bar—Clif Bar, a Berkeley, California-based maker of nutrition bars and foods for endurance activities, offset the carbon dioxide emissions associated with the energy used to power its offices, manufacturing operations, and business travel during 2002 by purchasing renewable energy credits generated from a new Native American-owned wind turbine. Through its participation in *Native*Energy's *Wind*Builders program, Clif Bar purchased RECs equivalent to 2.2 million kWh of wind energy generated during the life of the 750-kW Rosebud Sioux Tribe wind turbine in South Dakota. The purchase offsets about 2,000 tons of CO_2.

The Durst Organization—Under an agreement with ConEdison Solutions and Community Energy Inc. (CEI) announced in January 2004, the Durst Organization—a prominent New York City-based commercial real estate owner—has committed to purchase 10.5 million kWh of wind power annually to supply seven high-rise office buildings in Manhattan. The green power purchase represents 10% of the total energy consumed in the company's New York properties. ConEdison's *Green Power* product for commercial customers consists entirely of wind energy supplied by CEI and sourced from the 30-MW Fenner Wind Power Project located in Madison County, New York.

Green Power Market Development Group—Formed in 2000, the Green Power Market Development Group (GPMDG) is a commercial and industrial partnership of 12 companies dedicated to building corporate markets for green power. In September 2003, the GPMDG announced that member companies signed deals to obtain 97 MW of power from renewable and other clean energy generation options. Among the various commitments are purchases totaling 15 MW of wind energy and 36 MW of renewable energy certificates. The group's goal is to develop 1,000 MW of new, cost-competitive green power by 2010. The diverse group of businesses, which represent an estimated 8% of total U.S. corporate energy use, includes DuPont, General Motors, IBM, Interface, Johnson & Johnson, Kinko's, and Pitney Bowes. In 2003, Dow Chemical Company and Staples Inc. joined the group.

Interface Fabrics Group—Interface Fabrics Group, a supplier of fabrics for commercial interiors based in Guilford, Maine, purchases wind energy certificates equivalent to 10% of the electricity used at its Maine and Massachusetts facilities. Under the agreement with BEF announced in March 2003, the company is purchasing 12.5 million kWh of "green tags" over five years. Interface Fabrics Group, which is a division of Interface Inc. derives almost 90% of its thermal needs from biomass or waste wood chips.

Kinko's—In October 2003, Kinko's entered into agreements to expand its green power purchases by 80%. Under a contract with 3 Phases Energy Services, the company purchases 13.9 million kWh of biomass energy certificates for 45 retail stores in Virginia, North Carolina, and South Carolina. In addition, Kinko's entered into agreements with utilities in South Carolina, Wyoming, and Colorado to purchase green power for another 20 branches. With these agreements, the company is purchasing a total of 27 million kWh of green power annually for more than 25% of its retail stores spanning 18 states.

Lockheed Martin—Defense and aerospace contractor Lockheed Martin is purchasing enough green power to meet 10% of the annual electricity needs of its Palo Alto facilities through the City of Palo Alto Utilities' green pricing program. Under the agreement announced in October 2003, Lockheed Martin is purchasing 1.8 million kWh of renewable energy annually.

Lowe's Home Improvement Warehouse—Lowe's, the nation's 13th largest retailer, announced in July 2002 that it would purchase about 3% of its monthly electrical use for its 32 stores from the *Green Power Switch* program offered by the Tennessee Valley Authority (TVA) and its distributors. The company agreed to purchase about 4.5 million kWh of green power annually for its stores but expects to increase its purchases as other TVA power distributors with Lowe's stores join the green power program.

Lundberg Family Farms—Lundberg Family Farms, a Sacramento-based farm and packager of natural and organic rice products, is purchasing green power for 100% of the electricity used to run its milling, processing, and packaging operations. Under an agreement with 3 Phases Energy Services announced in July 2003, the farm is purchasing 4.4 million kWh per year of wind energy certificates supplied from the Stateline and Klondike wind energy facilities in Oregon

Luzenac America Inc.—In July 2003, Luzenac America Inc. entered into an agreement to purchase renewable energy certificates from the Bonneville Environmental Foundation to offset 100% of the greenhouse gas emissions associated with its electrical energy use at the Yellowstone Talc Mine in Montana. The certificates, or "green tags," represent more than 1.7 million kWh of renewable energy generated from wind energy sources in the region.

New Belgium Brewing Company Inc.—The New Belgium Brewing Company Inc. of Fort Collins, Colorado, purchases 100% wind energy to power the brewery's operations. A brewer of specialty beers, New Belgium entered into an agreement in March 1999 with Fort Collins Utilities to purchase the wind energy at a premium price for 10 years. The entire 70-person staff of New Belgium voted to purchase the wind power even though the additional cost will diminish the size of their annual bonuses. To supply the New Belgium contract, a new 660-kW wind turbine was added at the Platte River Power Authority wind site near Medicine Bow, Wyoming.

Office Depot—Office Depot, a national seller of office products with 867 retail stores in 44 states, entered into an agreement with Pittsburgh-based Strategic Energy in June 2004 to purchase green power for 12 of its California retail stores and warehouses. Under the two-year contract, the company will buy approximately 12 million kWh of electricity annually, generated from landfill gas.

Ski Industry—Expressing concern that global warming threatens the livelihood of the ski industry, its employees, and quality of life in general, the National Ski Areas Association (NSAA) is teaming with the Natural Resources Defense Council (NRDC) to reduce global warming emissions using a variety of measures, including green power purchases and on-site renewable energy use. The NSAA reports that member ski resorts are employing renewable energy in a number of different ways, including using wind energy to power chair lifts, purchasing renewable energy credits to offset a portion of their electricity use, and using solar

energy for heating or to generate electricity on-site. Among the green power marketers supplying ski resorts around the country are Bonneville Environmental Foundation, Community Energy Inc., Green Mountain Energy Company, and *Native*Energy.

Tower Companies—A family-owned commercial and residential building developer, the Tower Companies announced an agreement in March 2003 to purchase green power to supply company-owned buildings in the Washington, D.C., metropolitan area. Under the terms of the 18-month deal, Pepco Energy Services (PES) will supply 24 million kWh of green power to meet 50% of the energy needs of Tower's commercial buildings and 25% of the energy of Tower-owned apartment communities. Sterling Planet is providing the green power to PES using renewable energy certificates.

White Wave—A leading manufacturer of soy milk and other soy-based foods, White Wave contracted to purchase wind energy certificates equivalent to 100% of the electricity used in its manufacturing operations. In 2003, the company purchased 20 million kWh of "green tags" from two renewable energy suppliers—Renewable Choice Energy and Bonneville Environmental Foundation. The wind energy is supplied from wind farms in several different states, including Iowa, Oregon, Texas, Washington, and Wyoming.

Whole Foods Market Inc.—Whole Foods Market, a natural and organic foods supermarket chain, announced in June 2004 that it is purchasing wind energy certificates for 10% of the electricity used at its 28 stores and facilities in the North Atlantic Region, covering Massachusetts, Rhode Island, Connecticut, New York, and New Jersey. Under an agreement with Community Energy Inc., the company is purchasing 5.2 million kWh of wind energy annually generated from new wind energy projects in the Eastern United States. Combined with an earlier wind energy purchase for its Mid-Atlantic stores, Whole Foods is now buying a total of 11.2 million kWh of wind energy annually for 54 stores in the East. The two companies plan to launch an in-store educational campaign to inform Whole Foods customers about the benefits of wind energy and how to purchase wind energy for their homes.

Universities

American University—In February 2003, American University entered into a contract with Washington Gas Energy Services and Community Energy to meet 5% of its electricity needs for five years with wind power. The power is supplied from the 66-MW Mountaineer Wind Energy Center in West Virginia, which began operating in December 2002.

Carnegie Mellon University—A Pittsburgh-based research university of about 7,500 students, Carnegie Mellon University purchases wind power to meet 6% of its annual electricity needs. In 2001, the university began purchasing 5% wind energy or approximately 4.8 million kWh of wind energy annually under an agreement with green power marketer Community Energy. In 2003, the university expanded its purchase to 5.8 million kWh annually. The power is supplied from the Mill Run and Somerset wind energy projects located southeast of Pittsburgh, which have a combined capacity of 24 megawatts (MW).

Catholic University—In August 2002, the Catholic University of America, based in Washington, D.C., entered into an agreement with Washington Gas Energy Services to purchase wind energy, meeting 12% of its electricity needs for five years. The power is supplied from the 66-MW Mountaineer Wind Energy Center in West Virginia under a wholesale supply agreement with Community Energy. The purchase is equivalent to the entire annual output of one, 1.5-MW wind turbine.

College of the Atlantic—In July 2004, the College of the Atlantic, based in Bar Harbor, Maine, made a 20-year commitment to purchase wind energy for 100% of its electricity needs. The college signed an agreement with Endless Energy Corporation (EEC) to buy wind energy from the Redington Mountain Windfarm, which will be completed in 2005. Pending completion of the wind project, the College of the Atlantic is purchasing renewable energy credits, or "green tags," from *Native*Energy supplied from the Rosebud Sioux wind project in South Dakota.

Colorado State University—Colorado State University (CSU), a land-grant university in Fort Collins, Colorado, is offering students living in university residence halls a wind power purchase option. CSU, with an enrollment of 25,000 students, is believed to be the first university in the nation to allow on-campus residents to choose wind energy. Starting in fall 2004, the approximately 5,000 students living in residence halls have the option to purchase 100% wind energy for their rooms at a cost of $17 annually. The typical residence hall student uses about 1,600 kWh of electricity during the nine-month school year. The wind power is supplied by Fort Collins Utilities through its *Wind Power Program*.

Concordia University—In July 2003, Concordia University became the first college or university in the nation to subscribe to 100% green power for all of its power needs. The 77-year-old Lutheran school in Austin, Texas, enrolled in Austin Energy's *GreenChoice* program for all of the 5.5 million kWh of electricity that it uses annually. Concordia will use energy efficiency improvements to offset the additional cost of the green power.

Connecticut College—In December 2003, Connecticut College entered into an agreement with New York-based EAD Environmental to purchase wind energy for approximately 44% of its annual electricity needs, doubling its previous green power commitment. Under the two-year agreement, the college will purchase 13.3 million kWh of *Green-e* certified wind energy certificates sourced from wind farms in the United States.

Drexel University—Pennsylvania-based Drexel University purchases wind energy to meet nearly 10% of its electricity needs under an agreement reached with Community Energy in 2002. The wind purchase amounts to 4 million kWh per year or the output equivalent of a single 1.5-MW wind turbine. The wind energy is supplied from the new 64.5-MW Pocono Wind Farm near Scranton, Pennsylvania.

Duke University—In April 2003, Duke University teamed with certificate-marketer Renewable Choice Energy to issue a green power challenge to its students. The university has agreed to match student purchases of wind power up to 1.25 million kWh annually. Funding for the program comes from savings generated by a cooperative energy conservation effort between the university and Environmental Alliance, a student organization committed to promoting the

implementation of sustainable practices at the university. The student group is conducting events to promote the challenge.

Harvard University/University of Southern Maine— In May 2004, EAD Environmental, a New York-based green power marketer, announced that it will supply Harvard University and the University of Southern Maine (USM) with RECs to offset the electricity consumption of newly constructed, energy-efficient buildings. The purchases will help the universities achieve certification for their new buildings under the U.S. Green Building Council's (USGBC) LEED (Leadership in Energy and Environmental Design) Green Building Rating System. The LEED System is a voluntary, consensus-based national standard developed by the USGBC to certify high-performance, sustainable buildings.

Under a two-year contract, Harvard will purchase 3.99 million kWh of *Green-e* certified RECs from landfill gas generating projects, which is equivalent to 150% of the electricity needed to power the new Graduate Student Housing building. Under a separate two-year contract, USM will purchase 1.5 million kWh of *Green-e* certified RECs from wind energy facilities to offset the electricity needs of a new campus building, for which it is seeking LEED certification.

Oregon State University—In September 2003, Oregon State University (OSU) committed to purchase 5 million kWh of green power from the Bonneville Environmental Foundation (BEF). Under the four-year agreement, the university will purchase "green tags" representing the energy output of wind and solar facilities in the Pacific Northwest. The purchase was made possible through a state policy that allows large customers, like OSU, to self-direct a portion of their state-mandated public purpose charge payments to support specific renewable energy and energy efficiency programs. The university and BEF also plan to site a small renewable energy project, such as a solar photovoltaic array, on the campus.

Pennsylvania State University—Under a five-year contract with Community Energy (announced in October 2001), Penn State University began purchasing 13.2 million kWh of wind energy annually. In the spring of 2002, Penn State purchased another 4.4 million kWh of wind power for its satellite campuses to achieve a total purchase of 17.6 million kWh annually. The power is supplied from Mill Run and Somerset wind energy projects in Pennsylvania, which have a combined capacity of 24 megawatts (MW).

State University of New York—The University at Buffalo, the largest campus in the State University of New York (SUNY) system, is purchasing wind energy from the new Fenner wind project in upstate New York. Under a contract with Community Energy signed in 2002, the university purchased the entire output of one, 1.5-MW wind turbine, which represents about 2% of the university's electricity needs. In 2004, the University at Buffalo increased its purchase to the output of three wind turbines or 12 million kWh annually.

University of Colorado—By a margin of nearly 5 to 1, students at the University of Colorado voted in April 2000 to increase student fees by $1 per semester so that several campus buildings could be powered with wind energy. The wind purchase measure was placed on the ballot following a petition drive that garnered 1,300 student signatures. The affirmative vote for wind energy represented the largest margin of victory of any measure on the ballot. According to

college officials, the record turnout was directly attributable to student campaigning in support of the wind energy measure. The amount of wind energy purchased is roughly equivalent to the entire annual output of one large, 750-kW wind turbine. The university purchases the wind energy from Xcel Energy, which operates the *WindSource* green pricing program.

University of Pennsylvania—In April 2003, the University of Pennsylvania entered into a 10-year agreement to purchase 40 million kWh of wind energy annually from Community Energy. The new agreement doubles the amount of wind energy that the university previously purchased to the equivalent of 11% of its annual electricity needs. The purchase has made it possible for Community Energy and other partners to move forward with the construction a new 20-MW wind project in Pennsylvania, with the university purchasing 40% of the output.

University of Wisconsin—In the spring of 2003, the University of Wisconsin (UW) Oshkosh became the first Wisconsin university to make a green power purchase commitment. At least 3% of the university's electricity needs, totaling nearly 1 million kWh annually, will be provided through Wisconsin Public Service (WPS) Company's *NatureWise* product, which is sourced from a combination of wind and biomass resources in Wisconsin.

Local Government

City of Chicago—In June 2001, the City of Chicago and 48 local government agencies selected ComEd to supply 10% of their aggregated electricity needs with renewable power. Under the agreement, ComEd will increase the percentage of green power supply to 20% after five years, representing 80 MW of annual renewable power capacity from sources such as wind, solar, small hydro, and landfill gas. ComEd's profits from the sale of green power to the city will go into a Reinvestment Fund, which will be used to help attract and develop new renewable generation within the area. ComEd will administer the fund through the Environmental Resources Trust, a Washington, D.C., based auditing group that also will substantiate and track ComEd's green purchases.

City of Los Angeles/ Los Angeles World Airports—In October 1999, the Los Angeles World Airports (LAWA)—the municipal organization that governs the city's four airports, including Los Angeles International (LAX)—announced its participation in the Los Angeles Department of Water and Power's (LADWP) *Green Power for a Green LA* program. Under a 10-year agreement, LAWA will gradually increase the percentage of green power it purchases from LADWP, from an initial 10% of total electricity use to 50% in 2010. LAWA hopes to purchase 100% green power by 2015. LAWA initially is using discounted rate savings to pay the higher cost of the green energy, but the organization is prepared to spend an additional $250,000 annually to meet the longer-term commitment. LAWA currently purchases about 1 million kWh annually to power the LAX and Van Nuys airports.

On March 2, 2001, the Los Angeles City Council expanded the city government's purchases when it approved a plan to meet about 10% of the city's electricity needs with power generated from new renewable resources. The city will purchase approximately 50 million kWh per year of renewable power from LADWP. With the previous commitments from the city's airports and water system, the total city government green power purchase will be more than 70 million kWh.

Montgomery County Aggregation—In May 2004, an aggregation of Maryland city and county agencies led by Montgomery County entered into an agreement with Washington Gas Energy Services and Community Energy Inc. to meet 5% of the group's combined electricity usage with wind energy. Under the two-year deal, the buying group, which includes six county agencies, 11 municipalities, and Prince George's County, will collectively purchase 38 million kWh of wind energy annually sourced from the 66-MW Mountaineer Wind Energy Center in West Virginia. Montgomery County has included the wind energy purchase as a control measure for ozone pollution in a "State Implementation Plan" (SIP) for air quality improvement, which was recently submitted for approval to the U.S. Environmental Protection Agency (EPA).

City of Myrtle Beach—In April 2002, Myrtle Beach became the first city in South Carolina to purchase green power for its municipal facilities by subscribing to Santee Cooper's *GreenPower* program. Under the one-year agreement, Myrtle Beach purchased 372,000 kWh of green power—which represents between 2% and 5% of the city's total annual energy use—at an extra cost of $10,800, or 2.9¢/kWh.

New York Municipal Wind Buyers Group—In 2004, Community Energy announced that it is supplying 27 New York municipalities with wind energy to meet from 5% to 100% of their municipal electricity needs. The 27 communities are part of a "Municipal Wind Buyers Group," which is able to reduce wind energy prices for all members as they reach aggregate purchasing milestones. As of February 2004, the aggregated purchases had led to a 5% price reduction from the initial 2¢/kWh premium.

Port of Portland—In May 2001, PacifiCorp and Portland General Electric (PGE) announced that the Port of Portland (Oregon)—which owns and maintains five marine terminals, four airports, and seven business parks—will obtain about 1% of its electricity needs from renewable resources through the two utilities' green pricing programs. The port will purchase 6.3 million kWh of renewable energy annually through Pacificorp's *BlueSky* program and PGE's *Clean Wind* and *Salmon-Friendly Power* programs. The bulk of the purchase will support the development of new wind resources.

Radnor Township—In February 2003, the Board of Commissioners of Radnor Township (a suburb of Philadelphia with about 30,000 residents) unanimously approved a resolution to purchase wind energy to meet 62% of the township's electricity needs. Under a three-year contract with Community Energy and the Energy Cooperative of Pennsylvania, Radnor is purchasing 1.4 million kWh of wind energy annually from the new 66-MW Mountaineer Wind Energy Center in West Virginia. The township is offsetting the added cost of the green power with energy savings from the installation of energy-efficient LED traffic lights and competitive market savings from switching its entire electric load to ECAP.

Salt Lake City—In fall 2002, Salt Lake City Mayor Rocky Anderson approved a contract to purchase wind energy to supply Salt Lake's historic City and County Building. Under the agreement, the city purchases 350 blocks of wind energy monthly (or 420,000 kWh annually) from Utah Power. The extra cost of the wind energy is covered with savings realized from energy efficiency improvements. The Mayor's Office also worked with the Utah Wind Power

Campaign and Utah Power to develop a direct-mail piece for residents to tout the benefits of wind power.

City of Santa Monica—In March 2004, electricAmerica and the City of Santa Monica (California) renewed an agreement under which the company will continue to supply 100% renewable energy to the city's municipal facilities. The 5 MW purchase will be sourced from a variety of renewables such as wind, biomass, and geothermal. In 1999, Santa Monica became the first city in the nation to purchase green power to meet its entire municipal electricity needs.

City of Seattle— In fall 2001, the Seattle City Council (Washington) unanimously approved a plan for its municipal utility to obtain about 5% of its power supply from wind resources. Initially, Seattle City Light purchased 50 megawatts (MW) of wind energy generation from the Stateline project, under a contract with PacifiCorp Power Marketing Inc. The city's wind energy purchase will continue to increase to as much as 175 MW by August 2004. According to Mayor Paul Schell, the wind energy agreement moved the city more than halfway to its goal of obtaining 100 average MW from new renewable resources by 2011.

State Government

Connecticut— In April 2004, Connecticut Governor John G. Rowland issued an executive order that calls for state government to obtain 20% of its electricity needs from renewable energy sources by 2010, increasing to 50% in 2020 and 100% by 2050. The order, which covers all state-owned buildings (including colleges and universities), is an outgrowth of a stakeholders dialogue on climate change conducted during 2003. Under the order, the total state government demand for renewable electricity is estimated to be 140 million kWh in 2010.

Illinois—Illinois Governor George Ryan issued an executive order in April 2002 committing the state to purchase green power for at least 5% of the electricity used by buildings owned or operated by agencies under the governor's control. The amount of renewable energy purchased will increase to at least 15% by 2020. The executive order defines "green power" as electricity generated from renewable sources such as wind, solar, organic wastes, and hydropower. It excludes the burning of municipal solid waste, wood waste, or tires.

Maryland—In fall 2002, the Maryland Department of General Services (DGS) issued a solicitation for electricity service in the Conectiv service territory, which includes an "aggressive" green power procurement goal of 20%. At least 10% of the energy must come from wind or solar energy sources. The DGS already purchases green power to serve 6% of the load of 18 state agencies and departments in the Annapolis and Baltimore areas, under a two-year contract with Pepco Energy Services, which began in July 2002. The state's green power purchases are in response to an executive order issued by Maryland Governor Parris Glendening in March 2001 calling for at least 6% of the electricity consumed by state-owned facilities to be generated from green energy sources.

New Jersey—In July 2003, the State of New Jersey reaffirmed its commitment to purchase green power by entering into a 33-month contract with Pepco Energy Services and Community Energy for 54.9 million kWh or 20.6 MW of wind energy generated from wind farms in the mid-

Atlantic region. More than 90% of the wind power could come from the 20-MW Bear Creek wind farm to be constructed near Wilkes-Barre, Pennsylvania, less than 60 miles from northern New Jersey. The agencies entered into the agreement in part to meet the 10% environmentally friendly green power purchase goal established by New Jersey Governor James McGreevey.

New York—In June 2001, New York Governor George Pataki issued an executive order calling for state agencies to obtain 10% of their electricity needs from renewable sources (such as wind, solar, biomass, geothermal, and fuel cells) by 2005, with the percentage increasing to 20% by 2010. The order applies to state buildings and those of quasi-independent organizations such as the State University of New York and the Metropolitan Transportation Authority.

In June 2003, the New York Power Authority (NYPA) – a state-owned power supplier for state agencies, municipal utilities, and rural electric cooperatives – announced that it was in the final stages of negotiations with two wind project developers to purchase up to 50 MW of wind energy beginning in 2005. The authority plans to include the wind energy in a portfolio of renewable power to be supplied to state government customers, which will meet the goals of the executive order.

Pennsylvania—The Commonwealth of Pennsylvania purchases renewable energy to supply 5% of the state government's power needs. Under a two-year contract with Community Energy that began in 2002, the government agencies are purchasing about 50 million kWh of green power annually supplied from a mix of wind power, landfill gas, hydroelectric, and solar energy. In May 2003, the Commonwealth announced plans to increase the amount of renewable energy it purchases to 10% of total state government electricity use. The announcement came with the unveiling of a $5 million initiative called Pennsylvania Energy Harvest, designed to encourage greater development and use of renewable energy technologies throughout the state.

Rhode Island—In April 2004, Governor Donald Carcieri announced that the Rhode Island State Energy Office has committed to purchase enough green power to meet all of the electricity needs of the State House for the next five years. The purchase, equivalent to the output of one large wind turbine, will cost an estimated $210,000, which will be paid through funds from the Rhode Island Renewable Energy Fund. The State Energy Office plans to issue a competitive solicitation for the renewable energy supply.

Tennessee—In May 2002, Tennessee Governor Don Sundquist announced that all state buildings in Nashville, including the governor's mansion, were obtaining a portion of their power from renewable sources, making Tennessee the first state government in the Southeast to purchase green power. The power is supplied by Nashville Electric Service through the utility's participation in the Tennessee Valley Authority's *Green Power Switch* program, which uses wind, landfill-methane, and solar resources. The state purchases about 720,000 kWh annually at an extra cost of $19,000 per year.

Federal Government

Annual federal agency purchases of green power reached 527 million kWh in March 2004, an increase of 70% from July 2003. Including renewable energy generated from on-site systems, the

federal government uses 1,067 million kWh of renewable energy annually, which puts it more than three-quarters of the way toward meeting the 2.5% federal renewable energy usage goal for 2005. The federal goal was established by DOE pursuant to Executive Order 13123, which directed federal agencies to increase their use of renewable energy. A number of these federal green power purchases are described below.

Dyess Air Force Base—In early 2003, Dyess Air Force Base in Abilene, Texas, contracted with TXU Energy to purchase wind power to meet the entire electricity requirements of the base. Under the two-year agreement, Dyess will purchase approximately 78 million kWh of wind power each year. Dyess is offsetting the extra cost of the wind power with savings realized in the state's competitive retail electricity market.

Fairchild AFB—Fairchild Air Force Base, outside of Spokane, Washington, is purchasing renewable energy from the Bonneville Power Administration to meet the entire electricity load of the military base. Under the agreement announced in March 2004, Fairchild is purchasing 65.7 million kWh of green power from wind (99%) and small hydro (1%) projects in the region. The bulk of the purchase is in the form of renewable energy certificates, with the remainder made up of delivered energy.

General Services Administration— The General Services Administration (GSA) purchases 100% renewable electricity service to the Liberty Bell Pavilion at Independence National Historical Park and other federal government-operated facilities in Philadelphia. Under the three-year contract with Green Mountain Energy initiated in the fall of 2002, the federal government purchases 3.7 million kWh of green power annually. The facilities are purchasing Green Mountain Energy's *Nature's Choice*, a *Green-e* certified product generated from renewable resources such as wind, water, biomass, and solar generation.

GSA also purchases green power to meet the entire electricity needs of two of its buildings in New York – the Binghamton Federal Building and the Pirnie Federal Building in Utica. In 2002, GSA entered into a three-year contract with Select Energy to purchase 1.1 million kWh of wind energy annually at a premium of 1.75¢/kWh. The wind energy is supplied from the Fenner wind farm in New York.

In November 2003, GSA also contracted with Pepco Energy Services (PES) to supply electricity generated from renewable sources to the U.S. Departments of Interior, Labor, and Transportation. Under the contract, PES supplied more than 10 million kWh of *Green-e* certified power to the three federal agencies through May 2004. One-fourth of the green energy was supplied from regional wind farms with the remainder from landfill-gas projects.

National Renewable Energy Laboratory—In 2001, the National Renewable Energy Laboratory (NREL) entered into an agreement with Xcel Energy to use wind power to meet about 10% of the laboratory's annual electricity needs. Under the three-year contract, NREL purchases nearly 2 million kWh of wind energy each year through the utility's *Windsource* program at a cost of about $50,000 annually. NREL is a U.S. Department of Energy (DOE) research laboratory operated by the Midwest Research Institute (MRI) and Battelle.

Oak Ridge National Laboratory—In 2000, the U.S. Department of Energy's Oak Ridge National Laboratory (ORNL) began purchasing green power from the Tennessee Valley Authority (TVA) to meet a portion of its electricity needs. Under the agreement, the laboratory became one of the first industrial participants in TVA's *Green Power Switch* program. ORNL purchases 375 blocks, or 675,000 kWh annually, at an extra cost of $18,000 per year.

Pacific Northwest National Laboratory—In January 2004, the Pacific Northwest National Laboratory (PNNL) entered into agreements to purchase green power for all of the electricity used at its Marine Sciences Laboratory in Sequim, Washington. When added to preexisting purchases for its main campus in Richland, Washington, PNNL is purchasing 12 million kWh of green power annually, representing 15% of the laboratory's total electricity needs. The purchases are made from the Clallam County Public Utility District and the City of Richland. PNNL is a U.S. Department of Energy research laboratory operated by Battelle.

U.S. Army—In 2002, the U.S. Army entered into a contract with Washington Gas Energy Services to purchase wind energy for a portion of the electricity needs of the Walter Reed Army Medical Center, Fort McNair, and Adelphi Labs. The Army purchase is equivalent to the entire power output of one of the 1.5-MW wind turbines that comprise the 66-MW Mountaineer Wind Energy Center in Tucker County, West Virginia.

U.S. Department of Energy—In 2002, the U.S. Department of Energy (DOE) began purchasing green power to supply 17% of the electricity needs of its headquarters facilities in Washington, D.C., and Germantown, Maryland. Under the arrangement, the agency purchases 6 million kWh of green power annually, comprised of a blend of 25% wind power, supplied by Community Energy; and 75% landfill methane, supplied by Pepco Energy Services. DOE offsets the extra cost of the green power with savings realized from the competitive power market.

U.S. Environmental Protection Agency—In July 2004, the U.S. Environmental Protection Agency (EPA) announced that more than 400 companies and organizations have joined its Green Power Partnership Program, with collective purchases of 1.5 billion kWh of green power annually. The Green Power Partnership was founded in 2001 to help build demand for green power among commercial and industrial electricity customers.

As of June 2004, EPA facilities are purchasing more than 130 million kWh of green power annually, or the equivalent of 46% of the electricity consumed at all EPA facilities nationwide. This represents a dramatic increase in green power purchases compared to previous years. For example, during fiscal year 2003, EPA purchased approximately 30 million kWh of green power. EPA is currently purchasing green power for facilities including: Athens, Georgia; Chelmsford, Massachusetts; Cincinnati, Ohio; Duluth, Minnesota; Edison, New Jersey; Golden, Colorado; Grosse Ile, Michigan; Houston, Texas; Las Vegas, Nevada; New York, New York; Manchester, Washington; Research Triangle Park, North Carolina; Richmond, California; and its headquarters in Washington, DC. At least seven of its laboratories and one regional office are purchasing green power for 100% of their electricity usage.

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Appendix A

Table A-1: Utilities Offering Green Pricing Programs (September 2004)

Investor-Owned Utilities

Alabama Power Company
Alliant Energy
Arizona Public Service
Avista Utilities
Central Vermont Public Service
Consumers Energy
Dominion NC Power
DTE Energy (Detroit Edison)
Duke Power
El Paso Electric
Florida Power and Light
Georgia Power
Green Mountain Power
Hawaiian Electric
Idaho Power Company
Indianapolis Power & Light Company
Madison Gas & Electric
MidAmerican Energy
Minnesota Power
Northwestern Energy
OG&E Electric Services
Otter Tail Power Company
PacifiCorp*
Portland General Electric
Progress Energy
PSI Energy/Cinergy
Public Service of New Mexico
Puget Sound Energy
Savannah Electric
Tampa Electric Company
Tucson Electric Power Company
Unisource Energy Services
We Energies
Wisconsin Public Service Corporation
Xcel Energy

Electric Cooperatives

Basin Electric Power Cooperative*
Boone Electric Cooperative
Corn Belt Power Cooperative*
Dairyland Power Cooperative*
East Kentucky Power Cooperative*
Farmers Electric Cooperative
Georgia Electric Membership Corporation*
Great River Energy*
Holy Cross Energy
Hoosier Energy*
Lower Valley Energy
Midstate Electric Cooperative
Minnkota Power Cooperative*
Orcas Power & Light Cooperative
Oregon Trail Electric Cooperative
PNGC Power*
Peninsula Light Company
Tri-State Generation and Transmission Assoc.*
Vigilante Electric Cooperative
Wabash Valley Power Association*
Western Farmers Electric Cooperative*
Yampa Valley Electric Association

Federal

Tennessee Valley Authority*

Municipals/Other Public Utilities

City of Alameda
AMP Ohio
Anaheim Public Utilities
City of Ashland
Austin Energy
Benton County PUD
City of Bowling Green
Burbank Water and Power
Cedar Falls Utilities
Chelan County PUD
Clallum County PUD
Clark Public Utilities
Colorado Springs Utilities
Concord Municipal Light Plant
Cowlitz PUD
Electricities
Emerald People's Utility District
Eugene Water & Electric Board
Gainsville Regional Utilities
Grant County PUD
Grays Harbor PUD
Iowa Association of Municipal Utilities*
Lansing Board of Water and Light
Lewis County PUD
Lincoln Electric System
Los Angeles Department of Water and Power
Mason County PUD No. 3
Missouri River Energy Services*
Moorhead Public Service
Muscatine Power and Water
City of New Smyrna Beach
Oklahoma Municipal Power Association*
Omaha Public Power District
Pacific County PUD #2
City of Palo Alto Utilities
Pasadena Water & Power
Platte River Power Authority*
Roseville Electric
Sacramento Municipal Utility District
City of St. Charles
Salt River Project
City Public Service of San Antonio
Santee Cooper*
Seattle City Light
Snohomish County PUD
Southern Minnesota Municipal Power Agency*
City Utilities of Springfield
Tacoma Power
City of Tallahassee
Traverse City Light & Power
Waverly Light & Power
Wisconsin Public Power Inc.*

* denotes program offered through multiple utilities or distribution cooperatives

Table A-2: Utility Green Pricing Programs by State (as of September 2004)

	Utility Name	Program Name	Resource Type	Start Date	Premium
AL	Alabama Power	Renewable Energy Rate	biomass co-firing	2003/ 2000	6.0¢/ kWh
AL	TVA: City of Athens Electric Department, Cullman Electric Coop, Cullman Power Board, Decatur Utilities, Florence Utilities, Hartselle Utilities, Huntsville Utilities, Joe Wheeler EMC, Muscle Shoals Electric Board, Scottsboro Electric Power Board, Sheffield Utilities, Tuscumbia Electric Department	Green Power Switch	wind, landfill gas, solar	2000	2.67¢/ kWh
AZ	Arizona Public Service	Solar Partners Program	central PV	1997	$2.64/ 15kWh
AZ	Salt River Project	EarthWise Energy	central PV, landfill gas, small hydro	1998/ 2001	3.0¢/kWh
AZ	Tucson Electric	GreenWatts	landfill gas, PV, wind	2000	7.5-10¢/ kWh
AZ	Unisource Energy Services	GreenWatts	PV, various	2004	7.5-10¢/ kWh
CA	Anaheim Public Utilities	Green Power for the Grid	wind, landfill gas	2002	1.5¢/kWh
CA	Anaheim Public Utilities	Sun Power for Schools	solar	2002	Contribution
CA	Burbank Water and Power	Clean Green Support	various	2001	~1.2¢/kWh
CA	City of Alameda	Clean Future Fund	various, electric vehicles	1999	1.0¢/kWh
CA	City of Palo Alto Utilities/3 Phases Energy Services	Palo Alto Green	wind, solar	2003/ 2000	1.5¢/kWh
CA	Los Angeles Dept. of Water and Power	Green Power for a Green LA	wind, landfill gas	1999	3.0¢/kWh
CA	Pasadena Water & Power	Green Power	wind	2003	2.5¢/kWh
CA	Roseville Electric	RE Green Energy Program	geothermal, hydro, PV	2000	1.0¢/kWh
CA	Sacramento Municipal Utility District	Greenergy	wind, landfill gas, hydro	1997	1.0¢/kWh
CA	Sacramento Municipal Utility District	PV Pioneers I	PV	1993	$4/month
CO	Colorado Springs Utilities	Green Power	wind	1997	3.0¢/kWh
CO	Holy Cross Energy	Local Renewable Energy Pool	small hydro, PV	2002	3.3¢/kWh
CO	Holy Cross Energy	Wind Power Pioneers	wind	1998	2.5¢/kWh
CO	Platte River Power Authority (Estes Park, Fort Collins Utilities, Longmont Power & Communications, Loveland Water & Light)	Wind Power Program	wind	1996	2.5¢/kWh

CO	Tri-State Generation & Transmission (18 of 44 co-ops): Carbon Power, Chimney Rock, Gunnison County Electric, Kit Carson, La Plata Electric, Mountain Parks Electric, Mountain View Electric, New Mexico, Northwest Rural, Poudre Valley Rural Electric Association, Public Power District, Sangre, San Isabel Electric, San Luis Valley Rural Electric Coop, San Miguel Power, Springer Electric, United Power, White River	Renewable Resource Power Service	wind, landfill gas	1999	2.5¢/kWh
CO	Xcel Energy	WindSource	wind	1997	2.5¢/kWh
CO	Xcel Energy	Renewable Energy Trust	PV	1993	Contribution
CO	Yampa Valley Electric Association	Green Power	wind	1999	3.0¢/kWh
FL	City of Tallahassee/Sterling Planet	Green for You	hydro, solar	2002	2.5¢/kWh
FL	City of Tallahassee/Sterling Planet	Green for You	solar only	2002	11.6¢/kWh
FL	City of Tallahassee/Sterling Planet	Green for You	wind, biomass, hydro, solar	2004	1.85¢/kWh
FL	Florida Power & Light/Green Mountain Energy	Sunshine Energy	biomass, wind, solar	2004	0.975¢/kWh
FL	Gainesville Regional Utilities	GRUgreen Energy	landfill gas, wind, solar	2003	2.0¢/kWh
FL	Tampa Electric Company (TECO)	Tampa Electric's Renewable Energy Program	PV, landfill gas	2000	5.0¢/kWh
FL	Utilities Commission City of New Smyrna Beach	Green Fund	local PV projects	1999	Contribution
GA	Georgia Electric Membership Corporation (16 of 42 co-ops offer program): Carroll EMC, Coastal Electric, Cobb EMC, Coweta-Fayette EMC, Flint Energies, GreyStone Power, Habersham EMC, Irwin EMC, Jackson EMC, Jefferson Energy, Lamar EMC, Ocmulgee EMC, Sawnee EMC, Snapping Shoals EMC, Tri-County EMC, Walton EMC of Monroe	Green Power EMC	landfill gas	2001	TBD
GA	Georgia Power	Green Energy	landfill gas, wind, solar	TBD	5.5¢/kWh
GA	Savannah Electric	Green Energy	landfill gas, wind, solar	TBD	6.0¢/kWh
GA	TVA: Blue Ridge Mountain Electric Membership Corporation, North Georgia Electric Membership Corporation	Green Power Switch	wind, landfill gas, solar	2000	2.67¢/ kWh
HI	Hawaiian Electric	Sun Power for Schools	PV in schools	1996	Contribution
IA	Alliant Energy	Second Nature	wind, landfill gas	2001	2.0¢/kWh
IA	Basin Electric Power Cooperative: Lyon Rural, Harrison County, Nishnabotna Valley Cooperative, Northwest Rural Electric Cooperative, Western Iowa	Prairie Winds	wind	2000	1.0¢/kWh
IA	Cedar Falls Utilities	Wind Energy Electric Project	wind	1999	Contribution

IA	Corn Belt Power Cooperatives: (11 co-ops and 1 municipal cooperative) Boone Valley Electric Cooperative, Butler County REC, Calhoun County REC, Franklin REC, Glidden REC, Grundy County REC, Humboldt County REC, Iowa Lakes Electric Cooperative, Midland Power Cooperative, Prairie Energy Cooperative, Sac County REC, North Iowa Municipal Electric Cooperative Association	Varies by Utility	wind	2004	Contribution
IA	Dairyland Power Cooperative: Allamakee-Clayton/Postville, Hawkeye Tri-County/Cresco, Heartland Power/Thompson & St. Ansgar	Evergreen Renewable Energy Program	wind	1997	3.0¢/kWh
IA	Farmers Electric Cooperative	Green Power Project	biodiesel, wind	2004	Contribution
IA	Iowa Association of Municipal Utilities (80 of 137 participating) Afton, Algona, Alta Vista, Aplington, Auburn, Bancroft, Bellevue, Bloomfield, Breda, Brooklyn, Buffalo, Burt, Callender, Carlisle, Cascade, Coggon, Coon Rapids, Corning, Corwith, Danville, Dayton, Durant, Dysart, Earlville, Eldridge, Ellsworth, Estherville, Fairbank, Farnhamville, Fontanelle, Forest City, Gowrie, Grafton, Grand Junction, Greenfield, Grundy Center, Guttenberg, Hopkinton, Hudson, Independence, Keosauqua, La Porte City, Lake Mills, Lake View, Laurens, Lenox, Livermore, Maquoketa, Marathon, McGregor, Milford, Montezuma, Mount Pleasant, Neola, New Hampton, Ogden, Orient, Osage, Panora, Pella, Pocahontas, Preston, Readlyn, Rockford, Sabula, Sergeant Bluff, Sibley, Spencer, Stanhope, State Center, Stratford, Strawberry Point, Stuart, Tipton, Villisca, Vinton, Webster City, West Bend, West Liberty, West Point, Westfield, Whittemore, Wilton, Winterset	Green City Energy	wind, biomass, solar	2003	Varies by utility
IA	MidAmerican Energy	Renewable Advantage	wind	2004	Contribution
IA	Missouri River Energy Services (MRES): Alton, Atlantic, Denison, Fontanelle, Hartley, Hawarden, Kimballton, Lake Park, Manilla, Orange City, Paullina, Primghar, Remsen, Rock Rapids, Sanborn, Shelby, Sioux Center, Woodbine	RiverWinds	wind	2003	2.0 - 2.5¢/kWh
IA	Muscatine Power and Water	Solar Muscatine	solar	2004	Contribution
IA	Waverly Light & Power	Iowa Energy Tags	wind	2001	2.0¢/kWh
ID	Avista Utilities	Buck-A-Block	wind	2002	1.8¢/kWh
ID	Idaho Power	Green Power Program	various	2001	Contribution
ID	PacifiCorp: Utah Power	Blue Sky	wind	2003	1.95¢/kWh
ID	Vigilante Electric Cooperative	Alternative Renewable Energy Program	wind, solar, hydro	2003	1.1¢/kWh
IL	City of St. Charles/ComEd and Community Energy Inc.	TBD	wind, landfill gas	2003	Contribution

IL	Dairyland Power Cooperative: Jo-Carroll Energy/Elizabeth	Evergreen Renewable Energy Program	wind	1997	3.0¢/kWh
IN	Hoosier Energy (5 of 17 co-ops): Southeastern Indiana REMC, South Central Indiana REMC, Utilities District of Western Indiana REMC, Decatur County REMC, Davies-Martin County REMC	EnviroWatts	landfill gas	2001	2.0¢/kWh - 4.0¢/kWh
IN	Indianapolis Power & Light	Elect Plan Green Power Program	geothermal	1998	0.9¢/kWh
IN	PSI Energy/Cinergy	Green Power Rider	wind, solar, landfill gas, digester gas	2001	Contribution
IN	Wabash Valley Power Association (7 of 27 co-ops offer program): Boone REMC, Hendricks Power Cooperative, Kankakee Valley REMC, Miami-Cass REMC, Tipmont REMC, White County REMC, Northeastern REMC	EnviroWatts	landfill gas	2000	0.9-1.0¢/kWh
KY	East Kentucky Power Cooperative: Bluegrass, Clark, Inter County Energy Cooperative, Owen, Nolin, Salt River, Grayson, South Kentucky, Shelby, Cumberland, Licking, Jackson, Mason, Fleming	EnviroWatts	landfill gas	2002	2.75¢/kWh
KY	TVA: Bowling Green Municipal Utilities, Franklin Electric Plant Board	Green Power Switch	landfill gas, solar, wind	2000	2.67¢/kWh
MA	Concord Municipal Light Plant (CMLP)	Green Power	hydro	2004	3.0¢/kWh
MI	Consumers Energy	Green Power Pilot Program	wind	2001	3.2¢/kWh
MI	Detroit Edison	Solar Currents	central PV	1996	$6.94/100 watts
MI	Lansing Board of Water and Light	GreenWise Electric Power	landfill gas, small hydro	2001	3.0¢/kWh
MI	Traverse City Light and Power	Green Rate	wind	1996	1.58¢/kWh
MI	We Energies	Energy for Tomorrow	wind, landfill gas, hydro	2000	2.04¢/kWh
MN	Alliant Energy	Second Nature	wind, landfill gas	2002	2.0¢/kWh
MN	Basin Electric Power Cooperative: Minnesota Valley Electric Coop, Sioux Valley Southwestern	Prairie Winds	wind	2000	1.0¢/kWh
MN	Dairyland Power Cooperative: Freeborn-Mower Cooperative/Albert Lea, People's/Rochester, Tri-County/Rushford	Evergreen Renewable Energy Program	wind	1997	3.0¢/kWh

MN	Great River Energy (28) : Agralite Electric Cooperative, Arrowhead Electric Cooperative, BENCO Electric, Brown County Rural Electric, Connexus Energy, Co-op Light & Power, Crow Wing Power, Dakota Electric Association, East Central Electric Association, Federated Rural Electric, Goodhue County, Itasca Mantrap Cooperative, Kandiyohi Power Cooperative, Lake Country Power, Lake Region Electric Cooperative, McLeod Cooperative Power, Meeker Cooperative Light & Power, Mille Lacs Electric Cooperative, Minnesota Valley Electric Cooperative, Nobles Cooperative Electric, North Itasca, Redwood Electric Cooperative, Runestone Electric, South Central Electric Association, Stearns Electric, Steele-Waseca, Todd-Wadena, Wright-Hennepin Electric	Wellspring	wind	1997	1.45-2.0¢/kWh
MN	Minnesota Power	WindSense	wind	2002	2.5¢/kWh
MN	Minnkota Power Cooperative: Beltrami, Clearwater Polk, North Star, PKM, Red Lake, Red River, Roseau, Wild Rice, Thief River Falls	Infinity Wind Energy	wind	1999	1.5¢/kWh
MN	Missouri River Energy Services (39 of 55): Adrian, Alexandria, Barnesville, Benson, Breckenridge, Detroit Lakes, Elbow Lake, Henning, Jackson, Lakefield, Lake Park, Luverne, Madison, Moorhead, Ortonville, St. James, Sauk Centre, Staples, Wadena, Westbrook, Worthington	RiverWinds	wind	2002	2.0-2.5¢/kWh
MN	Moorhead Public Service	Capture the Wind	wind	1998	1.5¢/kWh
MN	Otter Tail Power	TailWinds	wind	2002	2.6¢/kWh
MN	Southern Minnesota Municipal Power Agency (all 18 munis offer program): Fairmont Public Utilities, Wells Public Utilities, Austin Utilities, Preston Public Utilities, Spring Valley Utilities, Blooming Prairie Public Utilities, Rochester Public Utilities, Owatonna Public Utilities, Waseca Utilities, St. Peter Municipal Utilities, Lake City Utilities, New Prague Utilities Commission, Redwood Falls Public Utilities, Litchfield Public Utilities, Princeton Public Utilities, North Branch Water and Light, Mora Municipal Utilities, Grand Marais Public Utilities	Wind Power	wind	2000	1.0¢/kWh
MN	Xcel Energy	WindSource	wind	2003	2.0¢/kWh
MO	Boone Electric Cooperative	Renewable Choice	wind	2003	2.0¢/kWh
MO	City Utilities of Springfield	WindCurrent	wind	2000	5.0¢/kWh
MS	TVA: City of Oxford, North East Mississippi Electric Power Association, Starkville Electric System	Green Power Switch	wind, landfill gas, solar	2000	2.67¢/kWh
MT	Basin Electric Power Cooperative: Lower Yellowstone	Prairie Winds	wind	2000	1.0¢/kWh
MT	Northwestern Energy	E+ Green	wind, solar	2003	2.0¢/kWh

MT	Vigilante Electric Cooperative	Alternative Renewable Energy Program	wind, solar, hydro	2003	1.1¢/kWh
NC	Dominion North Carolina Power, Duke Power, Progress Energy/CP&L ElectriCities (7 of 57) City of High Point, City of Laurinburg, City of Newton, City of Shelby, City of Statesville,Town of Apex, Town of Granite Falls NC Electric Cooperatives (14 of 27 cooperatives offer the program): Blue Ridge Electric Membership Corp., Brunswick Electric Membership Corp., Carteret Craven Electric Coop., Edgecombe-Martin County Electric Membership Corp., EnergyUnited, Four County Electric Membership Corp., Haywood Electric Membership Corp., Jones-Onslow Electric Membership Corp., Pee Dee Electric Membership Corp., Piedmont Electric Membership Corp., Randolph Electric Membership Corp., Roanoke Electric Membership Corp., Tri-County Electric Membership Corp., Wake Electric Membership Corp.	NC GreenPower	biomass, wind, solar	2003	4.0¢/kWh
NC	TVA: Mountain Electric Cooperative	Green Power Switch	landfill gas, solar, wind	2000	2.67¢/kWh
ND	Basin Electric Power Cooperative (49 co-ops offer program in 5 states): Oliver Mercer Electric Coop, Mor-gran-sou Electric Coop, KEM Electric Coop, North Central Electric Coop, Verendrye, Capital, Northern Plains, Dakota Valley, Burke Divide, Montrail Williams, McKenzie Elec. Coop, West Plains, Slope Electric Coop	PrairieWinds	wind	2000	0.5¢/kWh
ND	Minnkota Power Cooperative: Cass County Electric, Cavalier Rural Electric, Nodak Electric, Northern Municipal Power Agency (12 municipals)	Infinity Wind Energy	wind	1999	1.5¢/kWh
ND	Missouri River Energy Services: City of Lakota	RiverWinds	wind	2002	2.0-2.5¢/kWh
NE	Lincoln Electric System	Renewable Energy Program	wind	1998	4.3¢/kWh
NE	Nebraska Public Power District	Prairie Power Program	TBD	1999	Contribution
NE	Omaha Public Power District	Green Power Program	landfill gas, wind	2002	3.0¢/kWh
NE	Tri-State: Chimney Rock Public Power District, Northwest Rural Public Power District	Renewable Resource Power Service	wind, landfill gas	2001	2.5¢/kWh
NM	El Paso Electric	Renewable Energy Tariff	wind	2003	3.19¢/kWh
NM	Public Service of New Mexico	PNM Sky Blue	wind	2003	1.8¢/kWh
NM	Tri-State: Kit Carson Electric Cooperative	Renewable Resource Power Service	wind, landfill gas	2001	2.5¢/kWh
NM	Xcel Energy	WindSource	wind	1999	3.0¢/kWh
OH	AMP Ohio/Green Mountain Energy: Cuyahoga Falls	Nature's Energy	small hydro, wind, landfill gas	2003	1.3¢/kWh

OH	City of Bowling Green	Bowling Green Power	small hydro, wind, landfill gas	1999	1.35¢/kWh
OK	OG&E Electric Services	Wind Power	wind	2003	0.63¢/kWh
OK	Oklahoma Municipal Power Association (6 distributors participate): Altus, Edmond Electric, Frederick, Okeene, Prague, and Tonkawa	Pure&Simple	wind	2004	1.8¢/kWh
OK	Western Farmers Electric Cooperative (19 distribution cooperatives)	WindWorks	wind	2004	0.5¢/kWh
OR	City of Ashland/Bonneville Environmental Foundation	Renewable Pioneers	solar	2003	2.0¢/kWh
OR	Emerald People's Utility District/Green Mountain Energy	Choose Renewable Electricity	wind, geothermal	2003	0.78-1.2¢/kWh
OR	Eugene Water & Electric Board	EWEB Wind Power	wind	1999	0.7¢/kWh
OR	Midstate Electric Cooperative	Environmentally Preferred Power	wind, small hydro	1999	2.5¢/kWh
OR	Oregon Trail Electric Cooperative	Green Power	wind	2002	1.5¢/kWh
OR	Pacific Northwest Generating Cooperative (5 of 16 co-ops offer program): Central Electric Cooperative, Clearwater Power, Consumers Power, Douglas Electric Cooperative, Umatilla Electric Cooperative	Green Power	landfill gas	1998	1.8-2.0¢/kWh
OR	PacifiCorp: Pacific Power	Blue Sky Block	wind	2000	1.95¢/kWh
OR	PacifiCorp: Pacific Power/3 Phases Energy Services	Blue Sky Usage	existing geothermal, wind	2002	0.78¢/kWh
OR	PacifiCorp: Pacific Power/3 Phases Energy Services	Blue Sky Habitat	existing geothermal, wind	2002	0.78¢/kWh + $2.50 donation
OR	Portland General Electric/Green Mountain Energy	Green Mountain Renewable Energy Usage	existing geothermal, wind	2002	0.8¢/kWh
OR	Portland General Electric/Green Mountain Energy	Healthy Habitat	existing geothermal, wind	2002	0.99¢/kWh
OR	Portland General Electric Company	Clean Wind Power	wind	2000	1.75¢/kWh
SC	Santee Cooper, Aiken Electric Cooperative, Berkeley Electric Cooperative, Horry Electric Cooperative, Mid-Carolina Electric Cooperative, Palmetto Electric Cooperative, Santee Electric Cooperative, Tri-County Electric Cooperative	Green Power Program	landfill gas	2001	3.0¢/kWh

SD	Basin Electric Power Cooperative: Bon Homme-Yankton Electric Assn., Central Electric Cooperative Association, Charles Mix Electric Association, City of Elk Point, Clay-Union Electric Corporation, Codington-Clark Electric Cooperative, Dakota Energy Cooperative, Douglas Electric Cooperative, FEM Electric Association, H-D Electric Cooperative, Kingsbury Electric Cooperative, Lyon-Lincoln Electric Cooperative, McCook Electric Cooperative, Northern Electric Cooperative, Oahe Electric Cooperative, Renville-Sibley Coop, Sioux Valley Southwestern Electric Coop, Southeastern Electric Coop, Union County Electric Cooperative, Whetstone Valley Electric Cooperative, Black Hills Electric Coop, LaCreek Electric Coop, West River Power Association, Butte Electric Coop, Cherry Todd Electric Coop, Moreau Grand, Grand Electric Cooperative, Rosebud	Prairie Winds	wind	2000	1.0¢/kWh
SD	Missouri River Energy Services: City of Vermillion	RiverWinds	wind	2002	2.0-2.5¢/kWh
TN	Alcoa Electric Department, Appalachian Electric Cooperative, Athens Utility Board, Bristol Tennessee Electric System, Caney Fork Electric Cooperative, City of Maryville Electric Department, Clarksville Department of Electricity, Cleveland Utilities, Clinton Utilities Board, Cookeville Electric Department, Cumberland Electric Membership Corporation, Dickson Electric Department, Duck River Electric Membership Corporation, Elizabethton Electric System, EPB (Chattanooga), Erwin Utilities, Fayetteville Public Utilities, Gibson Electric Membership Corporation, Greeneville Light and Power System, Harriman Utility Board, Johnson City Power Board, Jackson Energy Authority, Knoxville Utilities Board, Lafollette Utilities Board, Lawrenceburg Power System, Lenoir City Utilities Board, Loudon Utilities, McMinnville Electric System, Meriwhether Lewis Electric Cooperative, Middle Tennessee Electric Membership Corporation, Morristown Power System, Mountain Electric Cooperative, Murfreesboro Electric Department, Nashville Electric Service, Newport Utilities, Oak Ridge Electric Department, Paris Board of Public Utilities, Plateau Electric Cooperative, Powell Valley Electric Cooperative, Pulaski Electric System, Sequachee Valley Electric Cooperative, Sevier County Electric System, Springfield Department of Electricity, Sweetwater Utilities Board, Tullahoma Utilities Board, Upper Cumberland Electric Membership Corporation, Volunteer Energy Cooperative	Green Power Switch	biogas, solar, wind	2000	2.67¢/kWh

TX	Austin Energy	GreenChoice	wind, hydro, landfill gas	2000/ 1997	0.5¢/kWh
TX	City Public Service of San Antonio	Windtricity	wind	2000	3.0¢/kWh
TX	El Paso Electric	Renewable Energy Tariff	wind	2001	1.92¢/kWh
UT	PacifiCorp: Utah Power	Blue Sky	wind	2000	1.95¢/kWh
VT	Central Vermont Public Service	CVPS Cow Power	biogas	2004	4¢/kWh
VT	Green Mountain Power	CoolHome, CoolBusiness	wind, biomass	2002	Contribution
WA	Avista Utilities	Buck-A-Block	wind	2002	0.33¢/kWh
WA	Benton County Public Utility District	Green Power Program	landfill gas, wind	1999	Contribution
WA	Chelan County PUD	Sustainable Natural Alternative Power (SNAP)	PV, wind, micro hydro	2001	Contribution
WA	Clallum County PUD	Green Power Rate	landfill gas	2001	0.7¢/kWh
WA	Clark Public Utilities	Green Lights	PV, wind	2002	1.5¢/kWh
WA	Cowlitz PUD	Renewable Resource Energy	wind, PV	2002	2.0¢/kWh
WA	Grant County PUD	Alternative Energy Resources Program	wind	2002	2.0¢/kWh
WA	Grays Harbor PUD	Green Power Program	wind	2002	3.0¢/kWh
WA	Lewis County PUD	Green Power Energy Rate	wind	2003	2.0¢/kWh
WA	Mason County PUD No. 3	Mason EverGreen Power	wind	2003	2.0¢/kWh
WA	Orcas Power & Light	Go Green	small hydro, wind, PV	1997	3.5¢/kWh
WA	Pacific County PUD	Green Power	wind, hydro	2002	1.05¢/kWh
WA	PacifiCorp: Pacific Power	Blue Sky	wind	2000	1.95¢/kWh
WA	Peninsula Light	Green by Choice	wind, hydro	2002	2.8¢/kWh
WA	Puget Sound Energy	Green Power	wind, solar	2002	2.0¢/kWh
WA	Seattle City Light	Seattle Green Power Program	solar, wind, biogas	2002	Contribution
WA	Snohomish County PUD	Planet Power	wind	2002	2.0¢/kWh
WA	Tacoma Power	EverGreen Options	small hydro, wind	2000	Contribution
WI	Alliant Energy	Second Nature	wind, landfill gas	2000	2.0¢/kWh
WI	Dairyland Power Cooperative: Barron Electric, Bayfield/Iron River, Chippewa/Cornell Valley, Clark/Greenwood, Dunn/Menomonie, Eau Claire/Fall Creek, Jackson/Black River Falls, Jump River/Ladysmith, Oakdale, Pierce-Pepin/Ellsworth, Polk-Burnett/Centuria, Price/Phillips, Richland, Riverland/Arcadia, St. Croix/Baldwin, Scenic Rivers/Lancaster, Taylor/Medford, Vernon/Westby	Evergreen Renewable Energy Program	wind	1997	3.0¢/kWh

WI	Great River Energy: Head of the Lakes	Wellspring	wind	1997	1.28-2.0¢/kWh
WI	Madison Gas & Electric	Wind Energy Program	wind	1999	3.33¢/kWh
WI	We Energies	Energy for Tomorrow	landfill gas, hydro, wind	1996	2.04¢/kWh
WI	Wisconsin Public Power Inc. (34 of 37 munis offer program): Algoma, Cedarburg, Florence, Kaukauna, Muscoda, Stoughton, Reedsburg, Oconomowoc, Waterloo, Whitehall, Columbus, Hartford, Lake Mills, New Holstein, Richland Center, Boscobel, Cuba City, Hustisford, Sturgeon Bay, Waunakee, Lodi, New London, Plymouth, River Falls, Sun Prairie, Waupun, Eagle River, Jefferson, Menasha, New Richmond, Prairie du Sac, Slinger, Two Rivers, Westby	Renewable Energy Program	small hydro, wind, biogas	2001	2.0¢/kWh
WI	Wisconsin Public Service	NatureWise	wind, landfill gas, biogas	2002	2.65¢/kWh
WI	Wisconsin Public Service	SolarWise for Schools	PV installations on schools	1997	Contribution
WY	Lower Valley Energy	Green Power	wind	2003	1.67¢/kWh
WY	PacifiCorp: Pacific Power	Blue Sky	wind	2000	1.95¢/kWh
WY	Tri-State: Carbon Power & Light	Renewable Resource Power Service	wind, landfill gas	2001	2.5¢/kWh

Table A-3: Retail Green Power Product Offerings in Competitive Electricity Markets (as of July 2004)

Company	Product Name	Residential Price Premium[1]	Fee	Resource Mix[2]	Certification
District of Columbia					
Washington Gas Energy Services/Community Energy	New Wind Energy	2.5¢/kWh	—	100 kWh blocks of new wind	
PEPCO Energy Services[3]	100% Green Electricity	3.41¢/kWh	—	100% biomass	—
	51% Green Electricity	3.05¢/kWh	—	51% biomass and 1% hydro	—
	10% Green Electricity	2.74¢/kWh	—	10% biomass	—
	100% NewWind Energy	4.3¢kWh		100% new wind	—
	51% NewWind Energy	3.42¢kWh		51% new wind	—
	product	N/A	—	50% to 100% eligible renewables	Green-e
Maine[4]					
Maine Renewable Energy/Maine Interfaith Power & Light	Green Supply	1.5¢/kwh	—	>= 50% small hydro, <=50% wood-fired biomass	—
Constellation New Energy/Maine Power Options	Maine Made (nonresidential)	NA	—	50% small hydro and 50% biomass	—
	Commercial Renewable Energy (nonresidential)	NA	—	various	Green-e
Maryland					
Washington Gas Energy Services/Community Energy	New Wind Energy	2.5¢/kWh	—	100 kWh blocks of new wind	—
PEPCO Energy Services[5]	100% Green Electricity	3.44¢/kWh	—	100% biomass	—
	51% Green Electricity	3.08¢/kWh	—	51% biomass and 1% hydro	—
	10% Green Electricity	2.77¢/kWh		10% biomass, 2% hydro	—
	100% NewWind Energy	4.97¢/kWh		100% new wind	—
	51% NewWind Energy	4.09¢/kWh		51% new wind	—
	Nonresidential product	N/A	—	50% to 100% eligible renewables	Green-e

Massachusetts					
Constellation New Energy	Commercial Renewable Energy (nonresidential)	NA	—	various	Green-e
Massachusetts Electric/Nantucket Electric/ CET & Conservation Services Group	GreenerWatts New England 100%	1.9¢/kWh	—	75% small hydro, 14% new* landfill gas, 10% wind, 1% new* solar	Green-e
	GreenerWatts New England 50%	0.95¢/kWh	—	37.5% small hydro, 7% new* biomass, 5% wind, 0.5% new* solar	—
Massachusetts Electric/Nantucket Electric/ Community Energy	New Wind Energy 100%	2.4¢/kWh	—	50% small hydro, 50% new* wind	Green-e
	New Wind Energy 50%	1.2¢/kWh	—	25% small hydro, 25% new* wind	Green-e
Massachusetts Electric/Nantucket Electric/ Mass Energy Consumers Alliance	New England GreenStart 100%	2.5¢/kWh		<=70% small hydro, >=19% biomass, 10.5% wind, 0.5% solar (>=25% of all green power is new*)	Green-e
	New England GreenStart 50%	1.25¢/kWh	—	<=36.5% small hydro, >=10% biomass, 5.25% wind, 0.25% solar (>=15% of all green power is new*)	—
Massachusetts Electric/Nantucket Electric/ Sterling Planet	Sterling Premium	1.2¢/kWh	—	65% small hydro, 25% biomass, 10% wind	—
	Sterling Premium Plus	2.2¢/kWh	—	75% small hydro, 15% new* biomass, 10% wind	—
New Jersey					
Constellation New Energy	Commercial Renewable Energy (nonresidential)	NA	—	various	Green-e

Green Mountain Energy Company[6]	Enviro Blend	0.13¢/kWh	$3.95/mo.	25% biomass, 20% small hydro, 5% wind, 50% large hydro	Green-e
New York					
1st Rochdale/Sterling Planet	Sterling Green	1.5¢/kWh	—	40% new wind, 30% small hydro, 30% biogas	Environmental Resources Trust
Agway Energy Products/Sterling Planet	Sterling Green Renewable Electricity	1.5¢/kWh	—	40% new wind, 30% small hydro, 30% biogas	—
ConEdison Solutions[7] / Community Energy	GREEN Power / New Wind Energy	0.5¢/kWh	—	25% new wind, 75% small hydro	Green-e
	GREEN Power / New Wind Energy (nonresidential)	NA	—	100% new wind	Green-e
Constellation New Energy	Commercial Renewable Energy (nonresidential)	NA	—	various	Green-e
Energy Cooperative of New York[8]	Renewable Electricity	0.5¢/kWh to 0.75¢/kWh	—	25% new wind, 75% existing landfill gas	—
Long Island Power Authority / Community Energy	Green Choice / New Wind Energy	2.0¢/kWh		100% new wind	—
	Green Choice / New Wind Energy and Water	1.0¢/kWh		60% new wind, 40% small hydro	—
Long Island Power Authority / EnviroGen	Green Choice / Green Power Program	1.0¢/kWh		75% landfill gas, 25% small hydro	—
Long Island Power Authority / Sterling Planet	Green Choice / Sterling Green	1.5¢/kWh		40% wind, 30% small hydro, 30% bioenergy	—
	Green Choice / New York Clean	1.0¢/kWh		55% small hydro, 35% bioenergy, 10% wind	—
Niagara Mohawk/Community Energy	60% New Wind Energy and 40% Small Hydro	1.0¢/kWh	—	60% new wind, 40% hydro	Green-e
	100% NewWind Energy	2.0¢/kWh	—	100% new wind	Green-e
	Blocks of NewWind Energy	2.0¢/kWh	—	100 kWh blocks of new wind	Green-e
Niagara Mohawk / EnviroGen	Think Green!	1.0¢/kWh	—	75% landfill gas, 25% hydro	—
Niagara Mohawk/Green Mountain Energy	Green Mountain Energy Electricity	1.3¢/kWh	—	50% wind, 50% small hydro	Green-e
Niagara Mohawk/Sterling Planet	Sterling Green	1.5¢/kWh	—	40% wind, 30% small hydro, 30% bioenergy	—

NYSEG / Community Energy	Catch The Wind / New Wind Energy	2.0-2.5¢/kWh	—	100-kWh blocks of new wind	Green-e
Rochester Gas & Electric/Community Energy	Catch the Wind	2.0-2.5¢/kWh	—	100-kWh blocks of new wind	Green-e
Select Energy	Nonresidential product	N/A	—	wind	—
Pennsylvania[9]					
ElectricAmerica	50% Hydro	0.39¢/kWh	—	50% large hydro	—
Energy Cooperative of Pennsylvania	Eco Choice 100	1.08¢/kWh	$5/year	90% landfill gas, 10% wind, 0.1% solar	Green-e
	New Wind Energy	2.5¢/kWh	—	wind	—
Green Mountain Energy Company	Green Mountain Energy Electricity	1.37¢/kWh	$3.95/mo.	10% wind, 90% hydropower	—
	Nature's Choice	1.39¢/kWh	$3.95/mo.	60% biomass, 30% small hydro, 10% wind, < 1% solar	Green-e
PECO Energy/Community Energy	PECO Wind	2.54¢/kWh	—	100-kWh blocks of new wind	—
PEPCO Energy Services	100% Renewable	3.39¢/kWh	—	100% renewable	—
	51% Green Electricity	3.0¢/kWh	—	51% biomass and 1% hydro	—
	10% Green Electricity	2.67¢/kWh	—	10% biomass	—
	100% NewWind Energy	4.5¢/kWh		100% new wind	—
	51% NewWind Energy	3.57¢/kWh		51% new wind	—
Rhode Island					
Constellation New Energy	Commercial Renewable Energy (nonresidential)	NA	—	various	Green-e

Narragansett Electric / Community Energy Inc.	NewWind Energy 100%	2.0¢/kWh	—	50% small hydro, 50% new* wind	Green-e
	NewWind Energy 50%	1.0¢/kWh	—	25% small hydro, 25% new* wind	Green-e
Narragansett Electric / Conservation Services Group	GreenerWatts New England 100%	1.7¢/kWh	—	75% small hydro, 14% new* landfill gas, 10% wind, 1% new* solar	Green-e
Narragansett Electric / People's Power & Light	New England GreenStart RI 100%	1.5¢/kWh	—	69% small hydro, 30% new* wind, 1% new* solar	Green-e
	New England GreenStart RI 50%	0.75¢/kWh	—	34.5% small hydro, 15% new* wind, 0.5% new* solar	Green-e
Narragansett Electric / Sterling Planet	Sterling Supreme 100%	1.98¢/kWh	—	40% small hydro, 25% biomass, 25% new* solar, 10% wind	—
Texas[10]					
Green Mountain Energy Company	100% Wind Power	0.66¢/kWh	$4.95/mo.	100% wind	—
	Reliable Rate Plan	0.46¢/kWh	$4.95/mo.	wind and hydro	—
	Month-to-Month Plan	0.26¢/kWh	$4.95/mo.	wind and hydro	—
Reliant Energy	Renewable Plan	0.0¢/kWh	$5.34/mo.	100% renewable energy	—
Strategic Energy	Nonresidential product	N/A	—	wind	—
TXU Energy	Nonresidential product	N/A	—	wind	—
Virginia					
Washington Gas Energy Services/Community Energy	New Wind Energy	2.5¢/kWh	—	100 kWh blocks of new wind	—
PEPCO Energy Services[11]	100% Green Electricity	4.367¢/kWh	—	100% biomass	—
	51% Green Electricity	3.997¢/kWh	—	51% biomass and less than 1% hydro	—
	10% Green Electricity	3.687¢/kWh	—	10% biomass	—
	100% NewWind Energy	5.027¢/kWh	—	100% new wind	—
	51% NewWind Energy	4.147¢/kWh	—	51% new wind	—

Source: National Renewable Energy Laboratory

Notes:
N/A= Not applicable.
[1] Prices may vary by service territory. Prices may also differ for commercial/industrial customers.
[2] New is defined as operating or repowered after January 1, 1999, based on the Green-e TRC certification standards. New power sources denoted with an asterisk (*) are new as of January 1, 1998.
[3] Offered in PEPCO service territory. Product prices are based on annual average costs for customers in PEPCO's service territory (5.04¢/kWh). http://www.dcpsc.org/customerchoice/whatis/electric/electric.shtm
[4] Price premium is for Central Maine Power service territory.
[5] Product offered in Baltimore Gas and Electric and PEPCO service territories. Price is for PEPCO service territory based on price to compare of 5.01¢/kWh. http://www.oag.state.md.us/energy/
[6] Green Mountain Energy offers products in Conectiv, GPU, and PSE&G service territories. Product prices are for Conectiv service territory (price to compare of 6.75¢/kWh).
[7] Price premium is based on a comparison to ConEdison Solutions' standard electricity product.
[8] Price premium is for Niagara Mohawk service territory. Premium varies depending on energy taxes.
[9] Product prices are for PECO service territory (price to compare of 6.17¢/kWh).
http://www.oca.state.pa.us/elecomp/pricecharts.html
[10] Product prices are based on price to beat of 10.4¢/kWh for TXU service territory (ONCOR).
http://www.powertochoose.org/
[11] Products are only available in Dominion Virginia Power service territory. Price is based on price to compare of 3.983¢/kWh

References:
Green power marketer and utility Web sites.
District of Columbia Public Service Commission http://www.dcpsc.org/customerchoice/whatis/electric/electric.shtm
Maryland Attorney General Electricity Supplier Rate and Service Information http://www.oag.state.md.us/energy/
Pennsylvania Office of Consumer Advocate Residential Price Comparison Charts
http://www.oca.state.pa.us/elecomp/pricecharts.html
Virginia's State Corporation Commission http://www.yesvachoice.com/howtochoose/howtoccompare.asp
Texas Public Utility Commission http://www.powertochoose.org/

Table A-4: Renewable Energy Certificate Product Offerings (as of July 2004)

Company	Product Name	Resource Mix	Location of Renewable Resources	Residential Price Premium*	Certification
3 Phases Energy Services	Green Certificates	100% new wind	Nationwide	2.0¢/kWh	Green-e
Aquila Inc.	Aquila Green Credits (nonresidential only)	100% new wind	Kansas	N/A	Green-e
Bonneville Environmental Foundation	Green Tags	≥98% new wind, ≤ 1% new solar, ≤ 1% new biomass	Washington, Oregon, Wyoming, Montana, Nevada	2.0¢/kWh	Green-e
Community Energy	New Wind Energy	100% new wind	Pennsylvania, West Virginia	2.5¢/kWh	Green-e
EAD Environmental	100% Wind Renewable Energy Certificates	100% new wind	Nationwide	1.5¢/kWh	(Green-e for nonresidential only)
	Home Grown Hydro Certificates	100% small hydro (<5MW)	New England	1.2¢/kWh	(Green-e for nonresidential only)
Green Mountain Energy	TRCs (nonresidential only)	100% renewable	Nationwide	N/A	Green-e
Maine Interfaith Power & Light/BEF	Green Tags (supplied by BEF)	≥98% new wind, ≤ 1% new solar, ≤ 1% new biomass	Washington, Oregon, Wyoming, Montana, Nevada	2.0¢/kWh	Green-e
Maine Interfaith Power & Light	First Wind of Maine	100% wind	Maine	4.0¢/kwh	—
Maine Power Options	MPO MaineMade Certificates (nonresidential only)	50% hydro, 50% biomass	Maine	NA	—
Mass Energy/People's Power and Light	New England Wind	100% new wind	Massachusetts	5.0¢/kWh	—
Mainstay Energy	Fossil Free 100% Renewable	100% renewable	Nationwide	2.0¢/kWh	Green-e
	Fossil Free 100% Wind	100% wind	Nationwide	2.5¢/kWh	Green-e
	Fossil Free 100% Solar	100% solar	Nationwide	20¢/kWh	Green-e

NativeEnergy	WindBuilders	100% new wind	South Dakota	1.0¢/kWh $10 per ton of CO2 avoided	**
	CoolHome	New biogas and new wind	Vermont and Pennsylvania (biomass), South Dakota (wind)	1.0¢/kWh $10 per ton of CO2 avoided	**
	WindBuilders Business Partners (nonresidential only)	100% new wind	South Dakota	<1.0¢/kWh <$10 per ton of CO2 avoided	**
NUON Renewables Ventures	PVUSA Solar TRCs (nonresidential)	100% solar	California	NA	Green-e
Pacific Renewables Inc.	Green Tags	100% new biomass	Nebraska	~3¢/kWh ($25/month for avg. consumer)	Green-e
PG&E National Energy Group	PureWind Certificates	100% new wind	New York	4.0¢/kWh	—
Pepco Energy Services	PES Green TRC (nonresidential only)	100% new renewables	Nationwide	NA	Green-e
PPM Energy	Green Tags from Wind Energy (nonresidential only)	100% new wind	Nationwide	NA	Green-e
Renewable Choice Energy	American Wind	100% new wind	Nationwide	2.0-4.0¢/kWh	Green-e
Sterling Planet	Green America	45% new wind, 50% new biomass, 5% new solar	Nationwide	1.6¢/kWh	Green-e
Sun Power Electric	ReGen (available in New England)	99% new landfill gas, 1% new solar	New York, Massachusetts, Rhode Island	3.6¢/kWh	Green-e
Waverly Light & Power	Iowa Energy Tags	100% wind	Iowa	2.0¢/kWh	—
WindCurrent	Chesapeake Windcurrent	100% new wind	West Virginia	2.5¢/kWh - 3.0¢/kWh	Green-e
Viking Wind	Green Energy Tags (nonresidential only)	100% new wind	Minnesota	NA	Green-e
Vision Quest	Green Energy (nonresidential only)	100% new wind	Alberta, Canada	NA	Green-e

*Large users may be able to negotiate price premiums.
** The Climate Neutral Network certifies the methodology used to calculate the CO2 emissions offset.
NA = Not applicable.
Source: National Renewable Energy Laboratory

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Voluntary consumer decisions to purchase electricity supplied from renewable energy sources represent a powerful market support mechanism for renewable energy development. Beginning in the early 1990s, a small number of U.S. utilities began offering “green power” options to their customers. Since then, these products have become more prevalent both from utilities and in states that have introduced competition into their retail electricity markets. Today, more than 50% of all U.S. consumers have an option to purchase some type of green power product from a retail electricity provider. This report provides an overview of green power marketing activity in the United States. The first section provides an overview of green power markets, consumer response, and recent industry trends. Section 2 provides brief descriptions of the utility green pricing programs available nationally. Section 3 describes companies that actively market green power in competitive markets and those that market renewable energy certificates nationally or regionally. The last section provides information on a select number of large, nonresidential green power purchasers, including governmental agencies, universities, and businesses.

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