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Utility Green-Pricing Programs: What Defines Success?

Blair Swezey and Lori Bird



National Renewable Energy Laboratory
A national laboratory of the U.S. Department of Energy

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Abstract

According to market research, large pluralities of customers have expressed a willingness to pay more for renewable energy. “Green pricing” is an optional utility service that allows customers to support a greater level of utility investment in renewable energy. Typically, utilities charge a rate premium for this service. Electric utilities in 29 states are now implementing green pricing programs. Customer response to utility green pricing programs provides one test of the willingness-to-pay premise.

The experience to date with green pricing programs is decidedly mixed. We found that the quality of utility green pricing products is generally high in that many utility programs focus on developing new renewable energy sources and offer customers a meaningful opportunity to contribute to environmental improvement through their electricity purchases. On the other hand, customer participation rates are less than 1% for more than half of the utility programs currently in place. The most successful

programs have garnered customer participation rates between 3% and 4%, with one program reaching more than 7%. These higher participation rates show that customers will respond favorably when green pricing products and programs are well-designed and marketed. Finally, only about a dozen utilities have developed much more than 2 megawatts of new capacity as a result of their green pricing programs.

In this report, we examine important elements of green pricing programs, including the different types of programs offered, the premiums charged, customer response, and additional factors that experience indicates are key to developing successful programs. The best-performing programs tend to share a number of common attributes related to product design, value creation, product pricing, and program implementation. We conclude with a list of “best practices” for utilities to follow when developing and implementing their programs.

Utility Green Pricing Programs: What Defines Success?

Introduction

“Green pricing” is an optional service through which customers can support a greater level of investment by their electric utility in renewable energy technologies.¹ Participating customers typically agree to pay a premium on their electric bill to cover the incremental cost of the additional renewable energy. To date, more than 85 utilities have implemented or have announced intentions to develop green pricing programs for their customers.² Customer participation in these programs has resulted in the installation of more than 110 megawatts (MW) of new renewable resources, with firm development plans for another 172 MW.

The number of utility programs has increased steadily over the last several years, with more than 24 new programs offered in 1999 and another 20 programs announced in 2000. Given the number of programs now in place, there is adequate experience with green pricing to comment on the quality of program offerings, customer response, and the degree to which green pricing programs are supporting long-term growth in renewable energy supply. Also, with additional utilities likely to initiate programs, it is important for these companies to have information on the breadth and quality of existing utility programs.

In this report, we examine the experience to date with green pricing programs, including the different types of programs offered, the premiums charged, customer response, and additional elements that this experience indicates are key to developing successful programs. We conclude with a list of “best practices” for

¹ Green pricing programs stand in contrast to green power marketing in competitive markets, in which retail customers have a choice of products and suppliers.

² The number of utilities is more than 220 if distribution cooperatives and other public utilities marketing green power supplied from a single generation and transmission cooperative or other public generating entity are counted individually.

utilities to follow when developing their programs.

The Theory Behind Green Pricing

As first articulated by David Moskowitz,³ green pricing is an optional service that utilities can offer for those individual customers who want to increase the utility’s reliance on renewables beyond that level which the utility considers to be “cost effective” to serve all of its customers. However, green pricing was not conceived to be a substitute for cost-effective renewables development or additional development that could be justified by general public support. The goal of green pricing therefore is to allow customers, through individual actions, to support a greater amount of renewable energy development by their utilities.

Although green pricing offers the potential to increase renewable energy development, some renewable energy advocates have opposed the concept. They argue that because increased use of renewable energy provides benefits to all customers, all customers should share in the cost of development.⁴ Green pricing programs essentially ask a subset of utility ratepayers to fund a public good, i.e., environmental improvement, through voluntary contributions rather than public policy measures. Although utility market research shows that majorities of utility customers polled express a preference for cleaner energy and a willingness to pay more, if necessary, for power generated from cleaner energy sources, there is evidence that consumers would prefer that the additional cost of renewable energy development be borne by all customers

³ David Moskowitz, “Green Pricing: Customer Choice Moves Beyond IRP,” *The Electricity Journal*, October 1993.

⁴ Rader and Norgaard argue that it is economically irrational to expect private citizens to pay for others’ benefits. See Nancy Rader and Richard Norgaard, “Efficiency and Sustainability in Restructured Electricity Markets: The Renewables Portfolio Standard,” *The Electricity Journal*, Volume 9, Number 6, July 1996.

rather than to target individual customers with voluntary programs.⁵ Nonresidential customers have expressed support for using public policy as well as voluntary customer choice to support the development of renewable energy.⁶

Advocates have also questioned whether customers will respond favorably to utility green pricing offerings—some early market research found that many customers who were likely to be program participants were skeptical of the utility’s motives in offering a program.⁷ And because utilities have long enjoyed a captive customer base, critics question whether utilities can effectively market a differentiated “green power” product to their customers. They fear that if few customers voluntarily choose to participate in a utility’s green pricing program, utilities will perceive this result as a tacit rejection of renewable energy.

Finally, some believe that providing for customer choice in truly competitive retail power markets is the best approach for green power marketing because new market entrants will be encouraged to offer a variety of renewable energy services in the retail market. Some competitive marketers also object to a utility’s ability to “brand” itself as a green power provider in advance of competition.

On the other hand, there are arguments to support the development of utility green pricing programs. First, green pricing is voluntary for utility customers and may represent the only renewable

energy alternative available where retail competition does not yet exist. If managed properly, customer contributions should lead to increased renewable energy development by the utility. Second, the availability of alternative service options, such as green pricing, may help prepare customers for competitive retail choice. Importantly, customers will learn that the source of their electricity supply has no effect on the reliability of electricity delivery. Third, whether or not customers choose to participate, the mere existence of a green pricing option can serve to educate customers about the environmental impacts of electricity generation and the benefits of increasing the use of renewable energy sources. And finally, through green pricing programs, utilities can gain valuable commercial experience with the development and operation of renewable energy technologies that may lead to greater commitments over the longer term.⁸

Green Pricing Programs

Electric utilities in 29 states are implementing green pricing programs. To date, more than 110 MW of new renewable energy capacity has been developed to serve these programs, with another 172 MW planned or already in development. Wind energy accounts for a large percentage of the capacity developed and planned, with smaller contributions from biomass resources (wood and landfill methane), small hydropower, and solar energy (see Table 1).

⁵ Barbara Farhar, *Willingness to Pay for Electricity from Renewable Resources: A Review of Utility Market Research*, National Renewable Energy Laboratory, NREL/TP.550.26148, July 1999; and Barbara Farhar and Timothy Coburn, *Colorado Homeowner Preferences on Energy and Environmental Policy*, National Renewable Energy Laboratory, NREL/TP-550-25285, June 1999. Also, see “The Fort Collins Wind Power Pilot Program: Who Subscribed and Why?” Prepared for Fort Collins Utilities by Q⁴ Associates and TecMRKT Works, November 1998.

⁶ Edward A. Holt, Ryan H. Wiser, Meredith Fowlie, Rudd Mayer, and Susan Innis, *Understanding Non-Residential Demand for Green Power*, National Wind Coordinating Committee, January 2001.

⁷ Moskovitz, op cit.

⁸ In fact, it has been argued that the success of Public Service Company of Colorado’s *Windsource* program was a “significant factor” in achieving a separate 25-MW, rate-based commitment to wind power. See Rudd Mayer, Eric Blank, and Blair Swezey, “The Grassroots are Greener: A Community-Based Approach to Marketing Green Power,” Renewable Energy Policy Project, Research Report No. 8, July 1999.

Table 1. New Renewables Capacity Supported by Green Pricing Programs (in kilowatts)

Source	Added	%	Planned	%
Wind	77,675	70.5	141,550	82.5
Solar	3,965	3.6	2,338	1.4
Biomass	21,490	19.5	25,660	15.0
Small Hydro	7,000	6.4	1,953	1.1
Total	110,130	100.0	171,501	100.0

There are essentially three types of green pricing programs—contribution, capacity-based, and energy-based—which are described in more detail below. More than three-fourths of utility programs under way or being planned use the energy-based approach (see Figure 1).

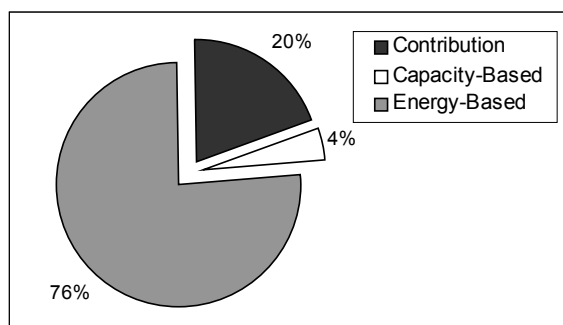


Figure 1. Distribution of utility green pricing program types

Contribution programs—Several of the earliest green pricing programs were designed to allow customers to contribute to a utility-managed fund for renewable energy project development. Eight utilities offer contribution programs that fund solar system deployment. In general, these types of programs are not developed to service the customer’s electricity needs with green power but to fund the installation of small solar photovoltaic (PV) systems in prominent locations within the community. One popular variation on this theme is the installation of PV systems at school sites that offset a portion of the school’s electricity needs with solar-generated electricity. A solar

curriculum is often included to create additional program benefits.

In most contribution programs, customers can determine the amount of their monthly donation, although some utilities have set minimum contribution levels as high as \$6 per month. Bill “round-up” is also a standard feature of many contribution programs. In some cases, the customer contribution is tax deductible, which utilities accomplish by setting up separate nonprofit entities to administer the program.

Overall, contribution programs have resulted in only small amounts of new renewable electric capacity, although it has been significant for the PV industry. A notable exception is the *PV Pioneers* program operated by the *Sacramento Municipal Utility District*, which has resulted in the installation of about 1.9 MW of rooftop PV systems since the program was initiated in 1993, although this program has been heavily subsidized by the utility to promote PV market development and achieve system cost reductions.

A number of utilities have adapted contribution programs for non-solar resources. Washington-based *Benton County Public Utility District* asks customers for contributions to pay the above-market costs of a 1-MW purchase from a landfill methane facility. *Cedar Falls Utilities* asks its customers to donate \$2.50 each month to support the operation and maintenance of three, 750-kilowatt (kW) wind turbines that were installed by a consortium of seven Iowa municipal utilities.

One of the more successful contribution programs is the *Renewable Energy Trust* developed by

Public Service Company of Colorado (PSCo) in 1993. At its peak, approximately 15,000 customers, representing more than 1% of the utility’s residential customers, contributed to the program through tax-deductible pledges or a bill round-up option. The program has helped fund more than 60 solar energy projects for the benefit of nonprofit groups and communities throughout the utility’s service territory, including 29 systems at local schools.

Capacity-based programs—Only four utilities now offer their customers fixed blocks of electric capacity generated from renewable energy sources. These programs have been exclusively PV-based, involving localized system applications that are generally larger than the systems installed in contribution programs. Monthly premiums range from \$6.00 to \$6.59 per 100 watts of capacity. The capacity blocks subscribed are usually well below the capacity necessary to serve the customer’s total electricity requirements.

One utility, *Arizona Public Service* (APS), started a capacity-based program but later switched from a solar-capacity charge to an energy-based rate. APS originally offered 100-watt blocks of solar capacity for \$3.00 per month, but now offers 15-kilowatt-hour (kWh) blocks of solar electricity for \$2.64 per month (17.6¢/kWh). The switch was made, in part, to offer customers “an easier way to calculate the amount of solar energy” that they receive.

Energy-based programs—This type of program allows customers to choose a discrete amount of energy to be supplied from renewable sources, usually in 100-kWh “blocks” or as a fixed percentage of their monthly electric energy requirements. Many utilities with energy-based programs allow customers to obtain 100% of their electricity use from green power.

With one exception, the green premiums charged in energy-based programs range from 1.0¢/kWh to as high as 17.6¢/kWh, with a median of 2.5¢/kWh (see Figure 2).⁹ The upper

level of the range represents programs offering exclusively solar energy, which can be several times more costly on an energy basis than other renewables-based generation. For this reason, most utilities with solar-based programs use the contribution or capacity-based pricing approaches. Wind energy tends to be the renewable resource of choice for energy-based programs, in large part because of its favorable economics for utilities with access to good wind resources and its popularity as expressed in customer surveys. More than half of utilities with energy-based programs use wind energy for all or a substantial portion of the renewable energy supply.

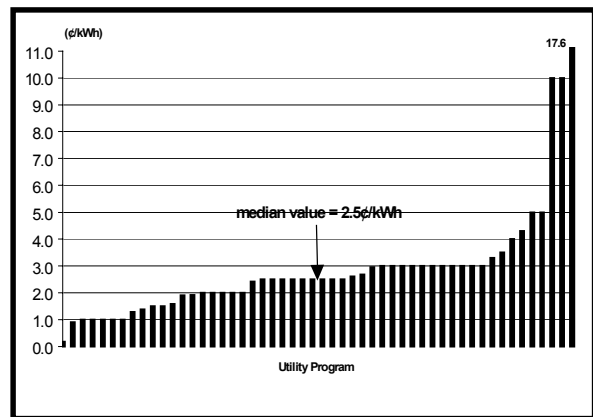


Figure 2. Comparison of price premiums for energy-based programs

A number of utilities offer programs based on a mix of renewable energy resources. For example, *Wisconsin Electric* taps a combination of landfill methane, wind, and small hydro, and both the *Tennessee Valley Authority* and *Austin Energy* are using landfill methane and wind, along with installation of local solar projects. The blending of different resource types allows utilities to diversify their renewable resource mix and take advantage of multiple local resources.

power offering. Because the utility’s *GreenChoice* subscribers are exempt from the utility’s fuel charge, the green rate has fallen below that of system power as natural gas prices have risen. Because this first product offering, which is now fully subscribed, was partially subsidized, subsequent participants pay a premium of 0.17¢/kWh.

⁹ In January 2000, Austin Energy announced a green power product, which was initially priced at 0.4¢/kWh above the cost of the traditional system

Finally, a handful of utilities have merged the contribution and energy-based designs, offering programs through which customers support the development of new renewable resources by paying a premium tied to an existing resource. For example, the *City of Bowling Green*, which owns a 6-MW share of a recently installed run-of-the-river hydro project, charges participating customers a 1.38¢/kWh premium—the “above-market” cost of the project—to receive up to 100% of their energy needs from hydropower, and uses the program revenues to develop new solar or wind resources.

Key Program Elements

Several elements are key to the successful design and implementation of green pricing programs. First is the *product design* itself. Will the product deliver tangible environmental improvement and foster customer interest? Second, does the utility *create personal value* for the participating customer? Third is *product pricing*. Is the premium cost-based and is the product fairly priced vis-à-vis the utility’s alternative power supplies? Has the utility looked for opportunities to minimize the premium? The final element is *program implementation*, which relates to the utility’s earnestness in building awareness of and marketing the product, as well as its commitment to procure and deliver as much green power as customers demand.

Product Design

Product design encompasses a number of different elements, such as the type of program offered, whether the product contains new or existing renewables, whether customers can obtain all of their electricity from renewables, and how much of the premium paid by customers actually goes toward developing new renewable energy sources.

Moskovitz reported market research results indicating that structuring green pricing as a charitable contribution will lead to less program participation.¹⁰ Although several early programs used the contribution approach, most utilities now offer energy-based products that support the

displacement of some portion of the standard utility generation mix with power generated from renewable energy sources. For example, *Moorhead Public Service* designed its *Capture The Wind* green power product so that customer purchases directly displace power from coal-fired plants with new wind energy. Most energy-based programs are also designed to allow customers to purchase up to 100% of their power needs as green power.

The majority of utilities with green pricing programs offer power from newly developed renewable energy projects. Although a small number of utilities are selling power from preexisting projects, most do so with the understanding that some portion of the program revenues will be used to fund new renewables development.

In her 1999 report on customer willingness to pay for renewable energy, Barbara Farhar of the National Renewable Energy Laboratory (NREL) presented market research findings for residential customers aggregated from 12 different utility surveys.¹¹ The data show that an average of 70% of customer respondents were likely to state that they would pay at least \$5 per month more, 38% of customers at least \$10 more, and 21% of customers at least \$15 per month more (see Figure 3).

One way to interpret this data is that there is a high likelihood that a utility can find a small number of customers to pay a nominal amount per month for a green power product. However, from a product-marketing perspective, there are likely multiple segments of customers that may be willing to pay different amounts for different types of products (see Figure 4). If a utility only offers a single program requiring a small level of customer contributions, it could be neglecting a segment of customers that may be willing to pay significantly more for a higher-quality product. A utility must thus decide whether to develop multiple green power products to appeal to different market segments or a single product to appeal broadly across its customer base.

¹⁰ Moskovitz, op cit.

¹¹ Farhar, op cit.

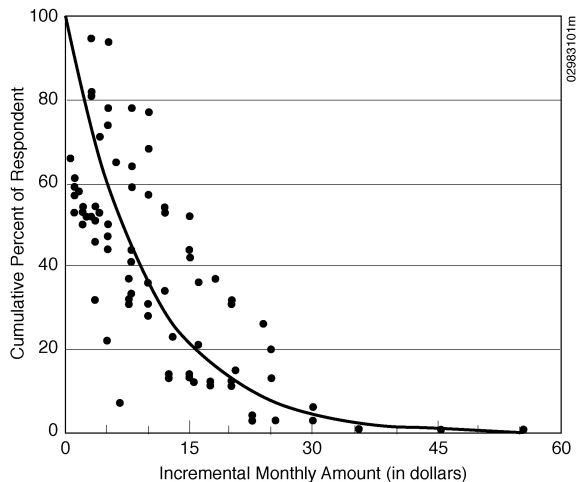


Figure 3. Aggregated willingness-to-pay curve for residential customers

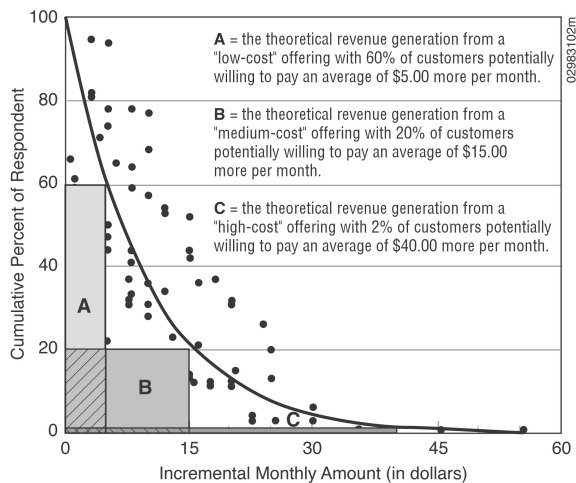


Figure 4. Representative market segments for green power¹²

PSCo offers three distinct green-power options that appeal to different customer segments. In 1993, the utility developed the *Renewable Energy Trust*, to which customers can make fixed contributions or use a bill “round-up” option. Through the Trust, PSCo deployed many off-grid PV systems and is now installing PV school systems. In 1997, PSCo introduced the *Windsorce* program, which enables customers

¹² Because the curve shows cumulative percentages, the revenues depicted are not necessarily additive. The authors thank Rolf Wüstenhagen of St. Gallen University for the market segmentation concept.

to purchase 100-kWh blocks of wind energy for an additional \$2.50 per month. Customers can choose any number of blocks up to their total monthly consumption. Only 20% of the utility’s green pricing customers participate in both programs. Finally, PSCo introduced the *Solarsource* pilot program, through which the utility arranges for the installation and interconnection of residential PV rooftop systems for customers who want to own their own grid-connected system. Although not strictly a green pricing program, *Solarsource* does appeal to a small segment of customers that are willing to pay much higher effective electricity prices for home-based solar systems.

The *Los Angeles Department of Water and Power (LADWP)* took a different approach, initially offering a low-cost, energy-based product to appeal to a broad section of its customer base—for a \$3.00 monthly contribution, residential customers can opt to receive 20% of their power needs (about 100 kWh per month) from renewable energy.¹³ More recently, LADWP introduced a solar program that offers incentive payments for PV-rooftop systems installed by residential and commercial customers.

Value Creation

A recent study performed by the Electric Power Research Institute (EPRI), an electric industry research group, found that “customers will pay more—and substantially more—for energy products which provide them with the value they seek.”¹⁴ As noted previously, increased use of renewable energy offers primarily public benefits in terms of a cleaner environment. Utilities with green pricing programs are essentially asking individual customers to pay the cost of providing these benefits for all customers. Accordingly, some utilities have devised a number of ways to add “value” to their green pricing products and generate private benefits for participating customers.

¹³ LADWP also offers a “zero premium” green power product for low-income customers consisting of power from existing renewable energy resources.

¹⁴ “Winning Customers in Competitive Energy Markets,” EPRI news release, April 25, 2000.

Tax deductibility—Some utilities use nonprofit organizations to manage and administer their programs so that customer contributions are tax deductible. *PSCo* established the *Renewable Energy Trust* to administer its green pricing contribution program. *Wisconsin Public Service Company* (WPS) uses its *WPS Community Foundation*, which was founded in 1964.

Personal recognition—One way to provide private customer benefits is to personally recognize program participants. Many utilities invite subscribing customers to project dedication ceremonies, operate project tours, or personally recognize subscribers on plaques or in program newsletters. Some utilities provide decals that businesses can place on their store windows to identify themselves as program participants and others have recognized business participants in program advertisements.

Visibility—Locating a renewable energy project within or in close proximity to the community makes the project tangible for participating customers and promotes a sense of personal ownership.

Educational benefits—Solar schools programs often provide student curriculums along with the solar system. In fact, the expressed goal of the *WPS* program is “to install solar electric systems on all high schools and to educate the students about solar energy.” The utility provides teachers with a curriculum package that includes a three-week unit on renewable energy, along with a complete set of audiovisual materials and laboratory equipment.

Civic pride—*LADWP* is perhaps the national leader in linking its green pricing program with the community. The utility’s *Green Power for a Green LA* program is part of a broader “Green LA” program, which includes energy efficiency, electric vehicles, tree planting, and recycling. *LADWP* has sponsored a Green Power for a Green LA Student Art Contest, a Run for a Green LA 5K/10K Run, and a Green LA Interfaith Environmental Summit “to impress upon community religious leaders its desire to work with them to promote the use of environmentally friendly programs within their congregations.” *APS* installs solar systems in

partnership with the host communities—the cities donate the land for the systems. And solar systems provide “free” electricity for participating schools, which helps conserve school budgets for other uses.

Promoting sustainability—Greater renewable energy development is only one approach to creating a sustainable energy path, which may be a primary motivating factor for customers to purchase green power. Utilities can integrate energy efficiency improvements with their green power products to offer additional environmental benefits. *LADWP* provides its green pricing customers with free energy efficiency products and services to offset the increased cost of the green power and provide additional program benefits.

Protection from fuel price increases—Because determination of an energy-based green power premium is, in part, tied to the utility’s cost of other resources, it follows that if the costs of these other resources increase, the green power premium should decrease accordingly. Nevertheless, very few utilities actively adjust their premiums to reflect changes in the avoided cost of other resources. *Eugene Water and Electric Board* (EWEB), which initially priced its wind energy product at 3.09¢/kWh, subsequently lowered the premium to 2.43¢/kWh because of increased power purchase costs that reduced the price differential between the wind energy and the utility’s avoided cost. And *Austin Energy GreenChoice* subscribers, who were already paying the nation’s lowest green pricing premium for power generated from 100% new renewable energy projects, saw the premium fall even further when natural gas prices rose during 2000 because they are exempt from the utility’s fuel charge.

Environmental benefits—Some utilities also offer explicit protection from rate increases for environmental remediation measures associated with nonrenewable generation resources. For example, in addition to fuel price protection, customers of *PSCo*’s *Windsorce* product are exempt from paying an “air quality improvement rider,” which will collect funds for improving the emissions characteristics of the

utility's coal-fired plants. However, one lurking question relates to the value of emissions credits that may accrue to green pricing-based renewable energy production. Very few utilities have explicitly established whether the utility retains ownership of these credits or whether the credits transfer to the customer by virtue of the green power purchase.

Pricing

One of the most important goals of a green pricing program should be to maximize the increment of renewable energy that is supported with customer contributions. In this respect, the size of the green power premium generally determines how much renewable energy can be supported per dollar contributed by customers. Clearly, some renewable energy technologies cost more than others, and a utility's access to different types of renewable resources will vary. Utilities also have different risk profiles; some utilities may seek to recover program costs more quickly than other utilities, and therefore will "front-load" the cost of resource acquisition, as well as administrative and marketing costs. Investor-owned utilities may also require a return on investment, whereas publicly owned utilities generally operate in a "nonprofit" fashion for the benefit of their customers. Nevertheless, there are a number of common issues related to determining a green pricing premium that we discuss below.

Is the green premium cost-based?

At the most basic level, a utility's green pricing premium should reflect the difference between the utility's cost of acquiring the renewable energy and its alternative cost of power. The size of the premium can depend on many factors, including the renewable energy technology(ies) selected, the quality of the renewable energy resource(s), the scale of the project(s), the project and utility company financials, the availability of subsidies or incentives, inclusion of administrative and marketing costs, the utility's avoided cost of energy, the amount of renewables already in the utility mix, and whether participating customers shoulder the full cost of the program.

Traverse City Light & Power, a Michigan-based municipal utility with 8,000 customers, was one of the first utilities in the nation to offer a green pricing program. The utility decided to build a 600-kW wind turbine at the edge of town and offer the energy at a premium rate, with each participating customer required to take 100% of its load from wind energy. Traverse City took a very simplified approach to pricing its product. The utility determined that the cost of the wind energy would be 5.5¢/kWh and that it would be eligible for the 1.5¢/kWh federal renewable energy production incentive (REPI) for publicly owned utilities.¹⁵ With an avoided cost of 2.42¢/kWh, that left 1.58¢/kWh to be recovered from the green power customer. To this date, Traverse City retains one of the lowest premiums charged for a utility green pricing product.

Dakota Electric Association, a Minnesota-based distribution cooperative, which offers its customers a 100% wind energy product supplied by its wholesale supplier, *Great River Energy*, also uses a simplified premium calculation. The utility's Optional Renewable Energy Rider defines the monthly renewable energy rate as "the weighted average energy cost for all outstanding renewable energy contracts, less Dakota Electric's wholesale cost of energy from all other sources." Dakota Electric also benefited from a state-based tax incentive program. At 1.28¢/kWh, Dakota Electric also has one of the lowest green pricing premiums among U.S. utilities.

Are the program revenues invested in new renewable energy development?

Customers want to know that the dollars they are contributing result in additional and meaningful renewable energy development. A corollary

¹⁵ The REPI is a federal financial incentive payment of 1.5¢/kWh (indexed for inflation) for 10 years for electricity produced and sold from new qualifying renewable energy generation facilities owned by state and local government entities (such as municipal utilities) and not-for-profit electric cooperatives. The payment is subject to the availability of annual appropriations in each federal fiscal year of operation.

exists with charitable giving, for which contributors want to be assured that the funds donated are supporting the actual cause being solicited for rather than fundraising and program administration. In this respect, utilities should investigate the use of third-party certification or verification approaches.¹⁶

How are marketing and administrative costs treated?

Many utilities strive to avoid any cross-subsidization of program costs between participating and nonparticipating customers. Typically, IOUs want to differentiate and recover all costs related to program development and operation. In contrast, many publicly owned utilities view program design, administration, and marketing as a general cost of operation, and thus base the green power premium primarily on the incremental cost of procuring the renewable energy resource. Indeed, Table 2 shows that publicly owned utilities tend to have lower green pricing premiums than IOUs.

Moskovitz noted that consumers are concerned that the price premium not be dominated by marketing and administrative costs.¹⁷ *Wisconsin Electric* limits marketing and administrative costs for its *Energy for Tomorrow* program to 20% of the renewable energy purchase cost, while in Texas, regulations limit these expenses to 20% of the total revenues collected in the first two years of the program and 10% in subsequent years.¹⁸

¹⁶ One such vehicle is the green pricing accreditation initiative being facilitated by the Center for Resource Solutions (CRS). CRS convenes local stakeholder groups of environmental organizations, utilities, and other interested parties to establish criteria for qualifying renewable energy resources and to develop standards for consumer and environmental protection. Accredited utilities also must undergo an annual, independent verification process to document that they delivered the promised green power to their customers.

¹⁷ Moskovitz, op cit.

¹⁸ In October 1998, the Texas Public Utility Commission adopted a rule that allows the state's electric utilities to offer a renewable energy tariff to retail customers "at a price level that covers the cost of acquiring the renewable energy."

Depending on the quantity of green power sold and the initial effort put into program design and marketing, marketing and administrative costs can represent a significant fraction of the green pricing premium. These costs also tend to be concentrated in the early years of program operation, which presents a dilemma over whether the costs should be recovered as they are accrued or amortized over a longer period of time. As an example, marketing and administrative expenses for *PacifiCorp's Blue Sky* product were estimated to account for nearly one-third of the utility's initial green pricing premium of 4.75¢/kWh, which was well above the median premium value for energy-based green pricing programs.¹⁹ PacifiCorp has since reduced the premium to 2.95¢/kWh to reflect "reductions in the forecast cost of new wind energy and increases in the forecast for market alternatives."²⁰

Has the premium been minimized?

Many utilities have taken advantage of state and federal subsidies and incentives to reduce their green pricing premiums. *Traverse City* received a \$50,000 grant from the Michigan Public Service Commission to defray part of the \$650,000 cost of its wind turbine installation, and *PSCo* received more than \$3 million from the U.S. Department of Energy (DOE) to support the early stages of its *Windsource* program development. And many utilities with PV-based, green pricing programs received grants through the TEAM-UP program, which is a partnership between DOE and the Utility PhotoVoltaic Group (now the Solar Electric Power Association). The federal production tax credit for wind energy, now worth an inflation-adjusted 1.7¢/kWh for the first 10 years of a project, also has been key to lowering the premi-

¹⁹ In fact, although the PacifiCorp tariff was approved in four states, the Idaho Public Utilities Commission denied the tariff application noting that "the proposed rate schedule appeared to be heavily weighted toward administration and marketing and not the actual renewable resource development program." See "IPUC Denies Utah Power & Light Request for "Green" Energy Rates," Idaho Public Utilities Commission Press Release, May 25, 2000.

²⁰ PacifiCorp Advice Letter No. 01-005 to the Oregon Public Utility Commission dated February 16, 2001.

Table 2. Distribution of Utility Green Pricing Programs by Premium Amount

Price Premium	Number of Utility Programs		
	Investor-owned	Public/Federal	Cooperative
< 2¢/kWh	5	8	6
2 – 3¢/kWh	4	12	7
> 3¢/kWh	7	2	1

ums of many wind-based products, and the federal REPI can be important for public utility programs.

The impact of both federal and state incentives is illustrated in the case of *Minnkota Power Cooperative*, a generation and transmission cooperative operating in eastern North Dakota and northwestern Minnesota. Minnkota offers its member distribution cooperatives and municipals an option to purchase wind-generated power through a program called *Infinity Wind Energy*. Minnkota originally began marketing the power at a premium of 6.0¢/kWh but later cut the premium in half because of the availability of both federal and state tax incentives for wind energy.

Does the amount of the premium affect participation?

An examination of energy-based green pricing programs with the highest customer participation rates shows no definitive relationship between the amount of the green pricing premium and program participation rates (see Figure 5).²¹ In his analysis of green pricing programs, Ed Holt reaches a similar conclusion for programs in which customers pay from \$1.00 to \$10.00 per month.²² Indeed, *Madison Gas and Electric* (MGE) charges one of the higher green pricing premiums at 3.3¢/kWh but has the third-highest

customer participation rate of 4.1%—the utility sold the entire output from more than 8 MW of new wind capacity in six months. On the other hand, *Austin Energy*, with the lowest green pricing premium in the country, completely sold out its initial 40 MW renewable resource allotment and is procuring additional resources for its customers.

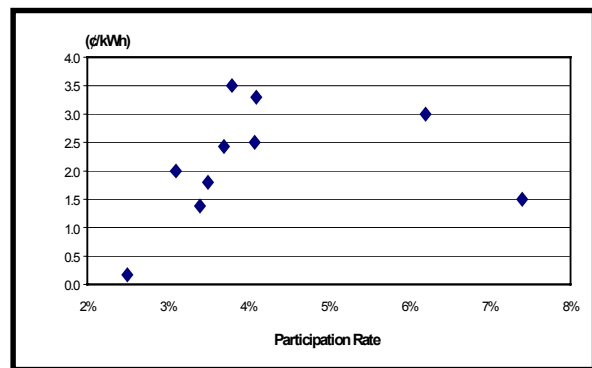


Figure 5. Participation rate vs. price premium for top 10 energy-based programs

In another analysis, Wisner, Bolinger, and Holt state that “the data suggest that perhaps the quality of the product and how well it is marketed, the credibility of the utility offering the program, or the ease of participation are more important determinants of participation.”²³ One can also speculate that customers are mostly uneducated about the cost and supply characteristics of the renewable energy product

²¹ Discerning a relationship between the premium charged and customer participation rates is complicated by the fact that many utilities limit program participation levels or the total amount of renewable energy they are willing to supply.

²² Ed Holt, *Green Pricing Update, 1999*, Electric Power Research Institute, TR-114211, 2000.

²³ Ryan Wisner, Mark Bolinger, and Edward Holt, “Customer Choice and Green Power Marketing: A Critical Review and Analysis of Experience to Date,” *Proceedings of the ACEEE Summer Study on Energy Efficiency in Buildings*, 2000.

but are generally favorable to supporting renewable energy and thus willing to contribute a nominal monthly amount to support a program.

Program Implementation

As the foregoing discussion suggests, one of the more important determinants of a successful green pricing program is the manner in which the program is implemented, which includes not only the utility's commitment to build awareness of and market the program, but the utility's willingness to partner with other groups and to expand the program, when warranted, to meet customer demand.

Is the message clear and simple?

Green pricing asks customers to pay more for a product that they are not accustomed to thinking about.²⁴ Furthermore, most consumers are unaware of how their electricity is generated and the environmental implications. Utilities must craft a message that customers will notice, let alone one that will convince customers to purchase the product.

Market research has identified a number of possible motives for customers to participate in green pricing programs, many of which, not surprisingly, are related to health and the environment. Among the motives identified by *Wisconsin Electric* are promoting new technology, providing for future generations, preserving nature for recreation, protecting human health, and just to "do the right thing."²⁵ For grid-tied PV systems, Farhar and Coburn found that consumers can also be motivated by potential financial rewards and noneconomic factors, such as the notion of pacesetting or

²⁴ Bud Beebe of the Sacramento Municipal Utility District has noted that many consumers don't understand power choice and view electricity as "something that comes with the house" rather than as a product that they purchase. Presentation to the Third National Green Power Marketing Conference, Sacramento, CA, June 25, 1998.

²⁵ Chris Schoenherr, Wisconsin Electric, Presentation to the Ohio Municipal Utility League, Bowling Green, OH, August 3, 1999.

"being on the cutting edge."²⁶ The key for utilities is to recognize the various motives and tailor the product message to meet the needs of their customers.

How is the program marketed?

Many utilities have found that targeted mailing based on market segmentation, using bill inserts or individual letters, supported with mass marketing, is most successful. Program messages should also be reinforced through community and business partnerships. As noted previously, *LADWP* has sponsored a number of community events around its *Green LA* theme. And *PSCo* has a unique relationship with a Denver-based television station that uses the utility's wind farm as a backdrop for its weather reports.

Is it easy for customers to participate?

It is also important to make it easy for customers to participate in a green pricing program. Do utility customer service representatives understand the product and can they describe its virtues to potential customers? Does the utility respond promptly and effectively to customer inquiries about the product? Do utilities offer the program to new customers at the time of service initiation? Can customers sign up for the program via the Internet? The greater the difficulty that customers face in signing up for a program, the less likely it is that these customers will purchase the product.

Does the utility partner with community or environmental groups?

Customers may not view the utility as a legitimate purveyor of environmentally beneficial technologies and services, and of renewable energy, specifically. The vast majority of the renewable energy development undertaken in the 1980s and early 1990s was implemented by non-utility developers under

²⁶ Barbara Farhar and Timothy Coburn, *A Market Assessment of Residential Grid-Tied PV Systems in Colorado*, National Renewable Energy Laboratory, NREL/TP-550-28872, September 2000.

federal and state mandates.²⁷ Many utilities also operate nuclear and coal-fired plants that are the focus of publicly expressed environmental concerns.

Some utilities have discovered that forging partnerships with environmental and other community groups can be an important strategy for establishing program credibility. In turn, members of these groups can represent a customer segment favorably predisposed to purchasing a well-conceived green power product.

Several utilities have had great success partnering with outside groups. One of the better known partnerships involves PSCo and the *Land and Water Fund of the Rockies* (LAW Fund). The LAW Fund undertook a “grassroots campaign” to educate customers about the environmental impacts of their energy choices and encourage them to purchase the utility’s wind power product.²⁸ Largely as a result of this partnership, PSCo sold out the entire 16 MW of power initially available to its retail customers and is expanding the program by another 36 MW. Much of the LAW Fund’s effort has involved outreach to nonresidential customers—nearly 400 nonresidential customers purchase wind power from PSCo.

These partnerships are most effective if the outside groups are involved at the outset of product development and program design. When *Wisconsin Electric* first announced its *Energy for Tomorrow* program, it was widely criticized by local advocacy groups. The utility subsequently engaged the groups in discussions, changed the program to respond to their concerns, and won their support.

Other utilities that have developed successful partnerships with outside groups include *Holy*

Cross Energy, *MGE*, *Moorhead Public Service*, and the *Tennessee Valley Authority*. And the *Union of Concerned Scientists* has documented a successful partnership with cooperative utilities in Minnesota.²⁹

Does the utility market to nonresidential customers?

Initially considered too price sensitive to pay more for green power, businesses, as well as other nonresidential customers, such as governments, institutions, faith-based groups, and non-profits, are increasingly recognizing that green power purchasing can help meet corporate and institutional goals related to environmental improvement and sustainable business practices.³⁰ The Center for Resource Solutions (CRS), a San Francisco-based organization that certifies the products of competitive green power marketers, reported that, in 1999, 38% of the demand for “Green-e” certified products sold in the California and Pennsylvania markets came from nonresidential customers, up from 21% in 1998.³¹

Utilities that have actively included nonresidential customers in their program marketing are achieving participation numbers similar to those reported by CRS for the competitive market. Both *MGE* and *PSCo* report that about 20% of the demand for their wind energy offerings comes from nonresidential customers, whereas businesses account for 38% of the wind energy sold by *Traverse City*. And *Austin Energy* sells 50% of the power available in its *GreenChoice* program to business customers. Overall, nonresidential customers are purchasing about 25% of the total green power sold through utility programs.

²⁷ The Public Utility Regulatory Policies Act of 1978 required electric utilities to interconnect with and provide backup power to “qualifying” renewable electric facilities, and utilities were required to purchase power from these facilities at their “avoided cost” of generation.

²⁸ Mayer, et al., op cit.

²⁹ Michael Tennis, Paul Jefferiss, and Steve Clemmer, “Cooperative Wind: How Co-ops and Advocates Expanded Wind Power in Minnesota,” Renewable Energy Policy Project, Research Report No. 3, May 1998.

³⁰ Holt, et al., op cit.

³¹ Center for Resource Solutions, “Commercial Customers Making Green Power Their Business,” Press Release, September 30, 2000.

Are limits imposed on the amount of green power that customers can purchase?

The ability of customers to purchase as much renewable energy as they choose goes to the heart of the utility's commitment to its green pricing program. Many utility programs are essentially pilot programs with a limited number of "subscriptions" available. Some utilities may also limit the number of blocks that a customer can purchase. Utilities should be confident in their ability to sell the product and be willing to build as much renewables as warranted by customer demand. Although concern may be expressed about the persistence of customer purchase commitments, virtually all utilities with long-running programs report that customer retention rates have been very high.

Defining Successful Programs

There may be many different standards by which to define a "successful" green pricing program. For example, a utility seeking to install only a single wind turbine or a community-based solar project may consider their program a success if they subscribe the entire project output. However, depending on the utility size, very few customers will have been given access to green power and very little new renewables development will have occurred.

We believe that the best way to measure the success of a green pricing program is in terms of maximizing both new renewable energy development and customer participation in the program. These measures come closest to gauging the strength of a utility's commitment to increase the proportion of renewable energy in its generation mix and to "mainstream" a renewable energy product with its customers.

Accordingly, we have prepared rankings of utility green pricing programs based on four measures that we believe indicate positive elements of or outcomes for utility green pricing programs. These factors are (1) the amount of new renewables development fostered by the program, (2) the total number of customer participants, (3) the customer participation rate,

and (4) the premium charged to support new renewables development.

Amount of New Renewables Developed

A primary objective of green pricing programs should be the development of new renewable resources driven by customer demand. Indeed, a very high percentage of utility programs have yielded some level of new renewable energy development. However, the magnitude of this development varies widely among utilities. Of the 35 utilities that have installed or contracted for new renewables to serve their programs, less than one-third have developed much more than 2 megawatts of new capacity. And nearly three-fourths of the 172 MW of new renewables development now planned for green pricing programs will serve just three utilities: *Austin Energy*, *PSCo*, and *City Public Service of San Antonio* (see Table 3).

Total Number of Customer Participants

Clearly, the greater the number of customers that participate in a utility's program, the greater the potential for significant new renewable energy development. *LADWP* is far and away the leading utility in terms of customer participants (see Table 4); however, this success must be tempered by the fact that about one-half of these participants are not paying extra to receive new, renewable energy sources. Nevertheless, these "non-premium-paying" participants have made an active decision to support renewable energy. *LADWP* also limits the renewable energy supplied to about 20% of the average residential customer's consumption, which requires only a \$3.00 per month commitment for premium-paying customers and is well within the average participation of about \$5.00 per month reported by many utilities.

**Table 3. New Renewable Resources Supported by Green Pricing Programs
(as of June 2001)**

Rank	Utility	Resources Used	Capacity
1	Los Angeles Department of Water and Power	Wind/various	25.0 MW ¹
2	Austin Energy	Wind/PV	23.2 MW ²
3	Public Service Company of Colorado	Wind	15.7 MW ³
4	Sacramento Municipal Utility District	Landfill methane/PV	10.2 MW ⁴
5	Madison Gas and Electric	Wind	8.2 MW ⁵
6	Wisconsin Electric	Wind/hydro/landfill methane	7.2 MW ⁶
7	Eugene Water and Electric Board	Wind	6.5 MW
8	Wisconsin Public Power Inc.	Hydro	6.0 MW
9	Platte River Power Authority	Wind	5.3 MW ⁷
10	Alliant Energy	Wind/landfill methane	4.6 MW

¹ LADWP purchases wind power equivalent to approximately 25 MW from Enron and PacifiCorp.

² Austin Energy plans to install another 53 MW of wind and landfill methane by the end of 2001.

³ PSCo sells 4.3 MW from its 20-MW wind project as wholesale power to other Colorado utilities; PSCo also plans to add 36 MW of new wind by the end of 2001.

⁴ Includes capacity installed for the *Greenenergy* and *PV Pioneers I* programs.

⁵ Madison Gas & Electric uses 3 MW of its 11.2-MW wind project to satisfy a state renewable energy mandate. The remainder of the project is supported through green pricing.

⁶ Wisconsin Electric purchases another 2.6 MW of existing landfill gas resources for its green pricing program.

⁷ Platte River supplies the power for programs offered by Fort Collins, Estes Park, Longmont, and Loveland (Colorado).

**Table 4. Total Number of Customer Participants
(as of June 2001)**

Rank	Utility	Program	Participants
1	Los Angeles Department of Water and Power	<i>Green Power for a Green LA</i>	80,000*
2	Public Service Company of Colorado	<i>Windsource</i>	14,110
3	Sacramento Municipal Utility District	<i>Greenenergy – All Renewables</i>	11,850
4	Public Service Company of Colorado	<i>Renewable Energy Trust</i>	10,900
5	Wisconsin Electric	<i>Energy for Tomorrow</i>	10,500
6	Austin Energy	<i>GreenChoice</i>	8,680
7	PacifiCorp	<i>Blue Sky</i>	6,000
8	Wisconsin Public Service	<i>SolarWise for Schools</i>	5,400
9	Portland General Electric	<i>Clean Wind Power</i> <i>Salmon-Friendly Power</i>	4,540
10	Madison Gas and Electric	<i>Wind Power Program</i>	4,480

* About half of the total are low-income customers that receive existing renewables at no extra cost.

Customer Participation Rate

Because a high ranking for such absolute measures as the amount of new renewables developed and the total number of customer participants can, in large part, be an artifact of a utility's size, the customer participation rate may be a better indicator of a utility's success in designing and marketing a product that appeals to a broad spectrum of its customers.

Moorhead Public Service is the leader among the nation's utilities with a customer participation rate of 7.4% for its *Capture The Wind* program (see Table 5).³² Several other utilities have achieved program participation rates of from 3% to 4%, but most green pricing programs have participation rates below 1%. Low participation rates may be attributable to several factors, including the experimental nature of many programs for which capacity and subscription limits are imposed, the fact the some programs have only been offered for a short time, a narrow product scope, or corporate indifference in supporting the product.

Interestingly, publicly owned utilities account for 9 of the 10 programs with the highest participation rates, suggesting that publics may have a higher level of credibility with their customers or expend greater marketing effort on their programs.³³ Public utilities may also impose fewer restrictions on program participation or renewable energy supply. Finally, Holt found that smaller utilities tend to have higher customer participation rates and suggests that "word of mouth" in communities with more personalized information networks might play a significant recruitment role among these types of utilities.³⁴

³² Even this high rate of participation is constrained by the availability of green power supply from the utility.

³³ In fact, a market research study performed for *Fort Collins Utilities* found that loyalty to the utility "appeared to be an underlying condition leading to (customer) decisions to subscribe" to the utility's green pricing program. *Supra*, Note 4 (Q⁴ Associates and TecMRKT Works).

³⁴ Holt, *op cit*.

Premium Charged to Support New Renewables Development

Although, as noted previously, the amount of a utility's green power premium can be a function of many factors, a low premium can be an indication of the amount of effort that the utility expended to provide the best deal for its customers or the degree to which the utility is willing to internalize some cost risk. All other things equal, the lower the premium charged, the greater the amount of renewable energy that can be supplied for each dollar customers are willing to spend in the program.

Excluding *Austin Energy*, the green pricing premiums of the top 10 (lowest-premium) utilities range from 1.0¢/kWh to 1.92¢/kWh (see Table 6). As of this writing, new *Austin GreenChoice* customers can choose to have 100% of their electricity requirements supplied from new renewable energy sources for just 0.17¢/kWh more than for the standard utility service.

**Table 5. Customer Participation Rate
(as of June 2001)**

Rank	Utility	Program	Rate
1	Moorhead Public Service	<i>Capture the Wind</i>	7.4%
2	Los Angeles Department of Water and Power	<i>Green Power for a Green LA</i>	6.2%*
3	Holy Cross Energy	<i>Wind Power Pioneers</i>	4.1%
3	Madison Gas and Electric	<i>Wind Power Program</i>	4.1%
5	Cedar Falls Utilities	<i>Wind Energy Electric Project</i>	4.0%
6	Orcas Power and Light Cooperative	<i>Green Power</i>	3.8%
7	Eugene Water and Electric Board	<i>EWEB Windpower</i>	3.7%
8	Central Electric Cooperative	<i>Green Power</i>	3.5%
9	City of Bowling Green	<i>Green Power</i>	3.4%
10	Consumers Power, Inc.	<i>Green Power</i>	3.1%

* About half of the total are low-income customers that receive existing renewables at no extra cost.

**Table 6. Premium Charged for New, Customer-Driven Renewable Power¹
(as of June 2001)**

Rank	Utility	Resources Used	Premium
1	Austin Energy ²	Wind/landfill methane/solar	0.17¢/kWh
2	Roseville Electric	Geothermal/PV	1.00¢/kWh
2	Sacramento Municipal Utility District	Landfill methane	1.00¢/kWh
2	Texas-New Mexico Power Company	Wind	1.00¢/kWh
5	Dakota Electric Association	Wind	1.28¢/kWh
6	City of Bowling Green (Ohio)	Landfill methane/wind	1.38¢/kWh
7	Great River Energy ³	Wind	1.50¢/kWh
7	Moorhead Public Service ⁴	Wind	1.50¢/kWh
9	Traverse City Light & Power	Wind	1.58¢/kWh
10	El Paso Electric ⁵	Wind	1.92¢/kWh

¹ Includes only programs that have installed or announced firm plans to install new renewable resources.

² Price for customers in second phase of program.

³ Suggested retail price for member distribution cooperatives.

⁴ Adjusted to reflect the cost of 100% new wind power.

⁵ Price premium for residential customers.

Conclusions

“Green pricing” has emerged as a vehicle for utilities to improve their environmental performance and provide their customers with product choices within the traditional regulatory framework. Over the last two years, the number of utilities offering green pricing programs increased considerably. In this report, we have assessed the experience to date with green pricing programs, focusing on the quality of program offerings, customer response, and the degree to which green pricing programs are supporting long-term growth in renewable energy supply. Based on this analysis, we conclude the following:

- The quality of utility green pricing products is generally high, i.e., many utility programs focus on the development of new renewable energy sources, offering customers a meaningful opportunity to contribute to environmental improvement through their electricity purchases.
- However, more than half of the programs examined have realized customer participation rates of less than 1%, which is far below what would be expected from market research and documented green consumer habits.³⁵ Although it is still early in the evolution of these programs, some utilities have clearly had greater success than others in attracting customers to their programs.
- The fact that some programs have garnered participation rates approaching 4% or higher shows that customers will respond favorably when green pricing products and programs

³⁵ Perhaps the most widely quoted analysis of green consumerism is the Roper Starch Green Gauge study, which consistently identifies a core group of 10% to 15% of consumers considered to be “green consumers,” and who thus may be prime candidates to subscribe to a utility’s green pricing program. Another one-third or so of consumers could possibly be swayed with appropriate messages. See Tibbett L. Spear, “Growing the Green Market,” *American Demographics*, August 1997.

are well-designed and marketed. Because of program subscription limits and the infancy of many programs, the limits of customer acceptance have yet to be truly tested.

- Although most utilities have installed some new renewable energy capacity to serve green pricing customers, the magnitude of this development varies widely. More than half of the approximately 110 MW of new renewables capacity installed to date serves customers in only four utility programs out of the more than 85 programs in existence. And nearly three-fourths of the 172 MW of planned renewables capacity additions will serve only three utilities.

The best-performing programs tend to share a number of common attributes related to product design, value creation, product pricing, and program implementation. Based on our review, we offer the following list of “best practices” for utilities to follow when developing and implementing green pricing programs:

Seek out the “best” renewable resources. Utilities should conduct a thorough survey of locally available renewable energy resources. They should research which renewable resources their customers are most interested in and what types of renewable energy projects can provide local economic benefits. Also, utilities should seek out opportunities to “blend” higher-cost resources with lower-cost resources. The best products may involve a blend of two or more resource types.

Offer power from new renewable energy projects. It’s hard enough to convince customers to pay more for renewable energy. They need to believe that they are investing in tangible environmental improvement.

Keep it simple. Programs and products that are overly complicated or that combine different environmental objectives may confuse customers.

Create value. Because increased use of renewable energy provides largely public

benefits, utilities should look for ways to provide private value for both residential and nonresidential customers. Examples include tax deductibility of contributions, development of community-based projects, customer recognition programs, and protection from rate increases resulting from fossil fuel price increases or environmental-compliance requirements.

Look for opportunities to reduce the premium. Price does matter. Some utilities may be more fortunate than others in having access to low-cost or high-quality renewable energy resources. If only higher-cost resources are available, utilities should look for opportunities to lower the cost through subsidies or grants, or by blending different types of clean resources. Utilities should also minimize the impact of marketing and administrative expenses on the green pricing premium and adjust the premium, when warranted, to reflect fossil fuel price changes.

Make participation easy. The fewer requirements the better. It is not necessary to impose contractual requirements because most utilities report very little turnover among their green pricing customers. Offer different product options or levels of participation. Also, utilities should not charge for the green power until the product is available to be delivered.

Make program information readily available. The product will not be successful if customers have to search for program information. Utilities should provide a dedicated telephone number for program sign-ups and inquiries, staffed with knowledgeable personnel, and respond promptly to customer inquiries.

The Internet can be a powerful tool for providing information and signing up customers. Utilities should give their green power program high visibility on the company Web site and not “bury” program information under site links that are not intuitively obvious to users.

Work with environmental and community groups. Many of the most successful programs have engaged outside groups or the wider community in marketing partnerships, which help publicize as well as legitimize the utility product offerings.

Include nonresidential customers. Businesses and other nonresidential customers are becoming increasingly interested in green power and represent a significant market segment for a green pricing product.

Seek out business and civic champions. Involving well-known businesses, public officials, and public agencies in program roll-out and advertising can enhance program visibility.

Take advantage of “free” advertising. Favorable media coverage and partnerships can provide free advertising for a utility program. Environmental and community groups, as well as businesses, will want to publicize their involvement with their members, employees, and other patrons. Identify local events that will provide visibility for the program.

Track your customers. Most customers will want to continue to receive green power when they change residences. Utilities should have a system in place to track customer moves within their service territory.

Appendix — Utilities Offering or Planning Green Pricing Programs

Investor-Owned Utilities

Alliant Energy
Arizona Public Service
Detroit Edison
El Paso Electric Company
Florida Power Corporation
Florida Power & Light
Gulf Power
Hawaiian Electric
Idaho Power Company
Madison Gas & Electric
Minnesota Power
Otter Tail Power Company
PacifiCorp*
Portland General Electric
PSI Energy/Cinergy
Public Service of Colorado
Reliant Energy (Houston Light & Power)
Southern Company*
Southwestern Public Service
Tampa Electric Company
Texas-New Mexico Power Company
Tucson Electric Power Company
Western Resources
Wisconsin Electric
Wisconsin Public Service Corporation

Electric Cooperatives

Dairyland Power Cooperative*
Dakota Electric Association
East River Electric Power Cooperative*
Flathead Electric Cooperative
Great River Energy*
Holy Cross Energy
Midstate Electric Cooperative
Minnkota Power Cooperative*
Orcas Power & Light
Pacific Northwest Generating Cooperative*
Tri-State Generation & Transmission Assoc.*
Wabash Valley Power Association*
Yampa Valley Electric Association

Municipal/Public Utilities

City of Alameda
City of Ashland
Austin Energy
Benton County Public Utility District
City of Bowling Green
Cedar Falls Utilities
Chelan County Public Utility District
City Public Service (San Antonio)
Colorado Springs Utilities
Eugene Water & Electric Board
Gainesville Regional Utilities
Lansing Board of Water and Light
Lincoln Electric System
Los Angeles Department of Water & Power
Moorhead Public Service
Nebraska Public Power District*
City of New Smyrna Beach
Omaha Public Power District
City of Palo Alto
Platte River Power Authority*
Roseville Electric
Sacramento Municipal Utility District
Salt River Project
Santee Cooper*
Southern Minnesota Municipal Power Agency*
Tacoma Power
City of Tallahassee
Traverse City Light & Power
Turlock Irrigation District
Waverly Light and Power
Wisconsin Public Power Inc.*

Federal

Tennessee Valley Authority*

* Program is offered through multiple utilities or distribution cooperatives.

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