



Chapter 5: Local Action Plan Best Bets Utilities

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Encourage Utility Providers to Offer Energy Efficiency Services

Cities typically obtain their electric and gas services either from municipal utilities or under contract from utilities that provide power to a much wider service territory. A few cities still derive their power from Rural Electric Co-ops.

Many of the best efficiency programs in the nation have come from municipally owned utilities. The programs profiled elsewhere in this manual of Osage, Iowa, Seattle City Light, Sacramento, California, and Burlington, Vermont are representative of the sorts of programs that a “muni” can offer. The difference between the efficiency programs offered by munis and those of “Investor owned utilities” has been so stark that many citizens have begun efforts to municipalize their

service territory.¹

But in truth, the privately held utilities can offer excellent efficiency and renewables programs, as well. In the 1980’s Southern California Edison found it cost effective to give away over a million compact fluorescent light bulbs. The energy saved this way was cheaper than just running SCE’s existing power plants. Utilities like Burlington Electric lease efficient light bulbs to their customers for pennies a month and give free replacements. Not only does this keep the bulbs from being thrown away, it enables customers to pay for the efficiency over time. Burlington’s Smartlight program has 65,000 bulbs in circulation serving over 7,000 homes, achieving an annual savings of over \$390,000.

For many years it was believed that it was in the financial interest of utilities to build more power plants. Indeed, until the early 1970’s every new plant

¹ In recent years activists from San Francisco, Berkeley, CA, Eugene OR, Boulder CO, Enid OK, Las Cruces NM, DeKalm, Hermon, Lisbon, Potsdam, and Russell, New York, and hundreds of other town have pressed for their city to take over the delivery of electric service. Some succeeded, others decided to stay with the private utility, www.local.org/gatekeep.html, 30 November 2006.

lowered costs for everyone in the system. Utility regulations were structured to reward building more plants, customers were urged to buy “All Electric Homes” and incentives were given to use more electricity. For a variety of reasons, this is no longer true: every new plant that is added to a system raises every customer’s rates, and has for almost 30 years. In many states, however, utilities are still rewarded for building more plants.²

Various states have experimented with regulations to encourage utilities to meet customers’ needs in the cheapest way. Programs like Integrated Resource Planning, which require utilities to compare the cost of building new capacity with the cost of doing the same job of meeting customers’ needs through energy efficiency, sought to level the playing field.³ Every competent analysis has shown that efficiency costs far less than new supply. For example, good efficiency programs, to, say, retrofit light bulbs, cost about 1 - 2¢ per kilowatt hour saved, while just running a coal plant costs 4 – 5 ¢. New wind, in good sites can cost as low as 3¢. Running an existing gas plant typically costs 5 – 6¢. The average price of electricity from the grid is at least 8¢ per kilowatt hour, and building a new nuclear plant can cost as much as 20¢. And these numbers do not count the cost of emitting carbon and threatening the climate.

Obviously, it is in everyone’s interests to pursue efficiency first, but few utility programs achieve this outcome. Until recently, utilities have tended to pursue only as much efficiency as regulators require them to. Only a few jurisdictions decoupled sales of electricity from utility profits, so utilities will no longer be rewarded for selling more electricity nor penalized for selling less.

There have been some notable exceptions. In California in the late 1980’s, the Public Utility Commission shifted its regulations to reward utilities with a portion of the savings they created for their customers by implementing efficiency. Within a few years, no utility in California projected the need to build any more power plants, and all projected that they would meet all future demand growth through renewable generation. Under this plan Pacific Gas and Electric, the country’s biggest private utility, spent \$150 million in 1991 to help make its customers more efficient, and kept 15% of the resulting savings, boosting its 1990 profits by \$40-50 million. Doing this returned over \$40 million to PG&E’s bottom line and saved its customers nine times that much. The PUC found that between 1990 – 93 such efficiency measures saved customers a net present value of almost \$2 billion.⁴ Unfortunately free market advocates overturned this program.

In the early 1990’s there were an array of experiments underway to enable the market for delivering customer value to function better. Eight states request for proposals to vendors to compete in an open auction for all ways to make or save electricity at, say 1¢ per kilowatt hour. On receipt of bids they signed contracts. If they needed more capacity, they then reopened bidding for efficiency or supply at 2¢ per kWh, then 3¢. At around 2 – 3¢ they met all of their required capacity, dramatically cheaper than building a new fossil fired plant.

Some utilities traded saved electricity, rewarding customers for actively reducing electricity use, or for saving other customers’ electricity. There is talk of creating spot and futures, markets in saved electricity (in 1993, Britain created such a futures market). Some electric utilities sold unregulated electric efficiency in other utilities’ territories. Some jurisdictions implemented programs to charge fees to connect inefficient buildings to the grid, and paid rebates for connecting efficient buildings, both on an open-ended sliding scale.

Cities should discuss all of these are measures with their utility or Public Utility Commission.

It is important to recognize that despite the fixation of utilities and most policy experts on supplying kilowatt-hours at the lowest price, what customers

²The Negawatt Revolution, www.eco-web.com/editorial/00892.html, 30 November 2006.

³Western Area Power Administration, www.wapa.gov/powerm/pmirp.htm, 30 November 2006.

⁴Hawken, Lovins Lovins, *Natural Capitalism*, P 273 – 74, Little Brown, 1999.

really want are the services that energy can deliver at least cost. And it is essentially always true that efficiency will do this cheapest, most reliably and with the fewest carbon emissions. Two programs, ENERGY STAR®, run by the Federal Department of Energy,⁵ and the State Scorecard on Utility Energy Efficiency Programs, run by the American Council for an Energy Efficient Economy⁶ offer assistance to utilities wishing to create energy efficiency programs.

Many states are now reviewing their utility policies. Simply entering “utility efficiency programs” in Google will return a wealth of information on what different states are doing. This is now a realm in which policy is

evolving very rapidly, and a city would be unwise to assume that the past must govern the future.

In New York, state regulators have imposed what is called a “system Benefit charge” (SBC) on all sales of electricity to pay for energy efficiency measures. Since 1998 most low-income energy efficiency programs have been funded through this SBC on electricity bills and administered by the New York State Energy Research and Development Authority (NYSERDA).

The SBC program, known as New York Energy Smart SM, provides efficiency programs for all customer classes, including low-income renters and homeowners. The SBC program was created to ensure that certain

energy efficiency and energy research programs were adequately maintained during the state's transition toward a more competitive electric market.⁷

As part of its utility restructuring, electric utilities in the State of New Hampshire established energy efficiency programs for statewide implementation by utilities regulated by the Public Utilities Commission. These programs serve residential, commercial and industrial customers. They include programs for new construction, retrofitting existing structures, and rebate programs for selected lighting and appliances. In addition to the statewide programs, individual utility-specific programs exist, including a pilot Pay-As-You-Save (PAYS) program.⁸

Energy Efficiency Program

Case Study: SCORE Pilot Program, Texas

TXU Electric Delivery operates the largest distribution and transmission system in Texas, providing power to three million homes and businesses and operates more than 114,000 miles of transmission and distribution lines in Texas. In 2006, TXU Electric Delivery's sponsored the Texas Schools Conserving Energy (SCORE) program, enabling seven participating school districts representing 95,416 students at 124 campuses to save enough energy to power 376 homes. In

2006, the programs saved 1,787 kilowatts and 4,257, 483 kilowatt hours of energy through energy efficiency measures. 95,416 students at 124 campuses In 2007 SCORE will enlist an additional eight to ten school districts.

SCORE is a public-private partnership and a component of TXU Electric Delivery's Energy Efficiency Program, providing viable energy efficiency and demand reduction solutions for public schools. Since its

inception in 2006 this program has saved over 350 megawatts of peak demand or enough energy to power 73,500 homes. Participating school districts identify the least energy-efficient facilities and develop an energy master plan so that they can reduce the district's energy bills. Reduced energy demand lowers budget pressures, provides infrastructure improvements, and better learning environments.⁹

⁵ Energy Star EEPs Resources, www.energystar.gov/index.cfm?c=reps_pt_reps, 30 November 2006.

⁶ ACEEE, Steven Nadel, Toru Kubo, and Howard Geller, April, 2000, www.aceee.org/pubs/u004.htm, 30 November 2006.

⁷ U.S. Department of Health and Human Services, www.sustainable.doe.gov/dereg/states/nyork.htm, 30 November 2006.

⁸ New Hampshire CORE Energy Efficiency Programs, www.puc.state.nh.us/Electric/coreenergyefficiencyprograms.htm, 20 January 2007.

⁹ TXU Electric Delivery Press Release, www.oncorgroup.com/about/newsroom/detail.asp?prid=1013, 29 January 2007.

Encourage Utility Providers to Set a Minimum Commodity From Renewable Energy Purchases

When a utility has achieved all of the cost effective efficiency it can, the next best bet is often the various renewable forms of supply. Renewable energy sources include wind, solar power, geothermal, hydropower, and various forms of biomass. Increasingly, electricity customers are being given supply options, either as retail power markets open to competition or when their regulated utilities develop green energy or efficiency pricing programs. More than 50% of retail customers in the U.S. now have an option of purchasing a green power product directly from their electricity supplier.^{10,11}

Utilities have created programs to help finance solar installations on customers' homes and factories. For Earth day 2005, Alameda County in California commissioned a 2.3 megawatt power plant, spread out on roofs all over the county, using solar cells. It will cut the county's energy bill \$700,000 a year, and

the local utility paid for half of the cost.

Since 1975, the city of Santa Clara, CA has taken a leading role in the development and promotion of the use of solar energy. That year, the city established the nation's first municipal solar utility. Under this program the city will supply, install and maintain solar water heating systems for residents and businesses within Santa Clara.¹²

Utilities across the country are offering wind electricity to their customers. Fort Collins was the first utility in Colorado and among the first in the nation to deliver wind energy to customers. Its Wind Power Program started in 1998. Strong customer demand expanded the program in 1999 and 2000.

In June 2004, the program expanded again in order to meet the goals of the City Council's Electric Energy Supply Policy. At that time, the price for wind energy dropped from 2.5¢ per kWh to 1¢ per kWh.¹³

Other utilities offering wind power include Austin, Texas, Xcel Energy, Basin Electric in Montana, Oklahoma Gas and Electric, Florida Power and Light and many others.¹⁴

Cities can purchase renewable energy directly. Many municipalities are realizing the benefits of diversifying their energy portfolio not only by implementing energy efficiency, but also by investing in renewable technologies (often called green power). Doing this can strengthen the local economy, have a positive impact on the local job market.¹⁵ Using local renewable power also increases the security of the community.¹⁶ Fossil fuel generated power generally comes from across state and even international borders, far from customer demand; whereas renewable energy sources are mostly smaller in size and locally owned and operated.¹⁷

Cities that purchase a green power product demonstrate increased demand for renewable technology. Such demand helps to develop further renewable energy sources, which can reduce the burning of fossil fuels.

Municipal or commercial utilities can set up green power programs for communities. In these programs residents have the opportunity to purchase renewable energy for their homes, businesses, etc. Such programs often charge a premium rate, although increasingly renewables such as

¹⁰ U.S. DOE Green Power Network, www.eere.energy.gov/greenpower/buying/index.shtml, 19 September 2006.

¹¹ Check to see if your State offers Green Power Programs.

www.eere.energy.gov/greenpower/buying/buying_power.shtml, 19 September 2006.

¹² City of Santa Clara, www.ci.santa-clara.ca.us/pub_utility/ws_muni_solar.html, 30 November 2006 For information, call the Solar Engineer at 615-2000.

¹³ Fort Collins, Wind Power Program, fcgov.com/utilities/wind-history.php, 30 November 2006.

¹⁴ U.S. DOE, www.eere.energy.gov/greenpower/resources/tables/topten.shtml, 30 November 2006.

¹⁵ Robert Sanders, "Investment in Renewable Energy Better for Jobs As Well As the Environment," www.berkeley.edu/news/media/releases/2004/04/13_kamm.shtml, 30 November 2006.

¹⁶ The National Renewable Energy Laboratory's web site provides an additional discussion of the benefits of renewable energy. www.nrel.gov/learning/, 19 September 2006.

¹⁷ Interstate Renewable Energy Council, www.irecusa.org/municipal/municipal_guide.pdf, also archived at, www.natcapsolutions.org/ClimateManual/Cities/Chapter5/BestBets/Utilities/IREC_municipal_guide.pdf, 27 September 2006.

wind power are cheaper than running existing coal plants.¹⁸

In a green power transaction, a utility (or power marketer) buys renewable energy from a renewable energy facility. This electricity is delivered into the power pool, where it mixes with all the other

electricity being generated at the time. Finally, the power is delivered to all customers of that utility. The mix of "green" and "brown" power is actually shared by everyone while the environmental attributes are credited to the customers who have paid a premium to create that benefit.¹⁹

Many cities, states, federal agencies, universities and businesses have worked with their municipalities to offer green power purchasing programs.^{20,21} For more information about Renewable Energy Planning, refer to Chapter 5, Long Term Initiatives.

Renewable Energy Purchasing

CASE STUDY: Newark, DE

On January 24, 2005 the [Newark, Delaware City Council](#) unanimously approved a resolution to increase the city's purchase of renewable energy to 2% of total electricity use by 2006 or approximately 7.5 million kWh annually. The vote followed a recommendation made by the City's Conservation Advisory

Commission to increase renewable energy purchases from the current level of 0.1% to 0.5% in 2005 and 2% in 2006. It is estimated that the purchase will increase the average household electric bill by 14¢ per month in 2006. The city, which operates its own electric utility and purchases power on the

wholesale power market, currently uses about 373 million kWh of electricity annually.²²

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Renewable Energy Purchasing

CASE STUDY: Boulder, CO

In November 2005 Boulder, Colorado announced that it exceeded its goals for a recent campaign designed to increase the number of residents and businesses purchasing green power. During the roughly two-month "Wind Power Challenge," 1,150 customers signed up to purchase wind power from local

renewable energy suppliers, far exceeding the campaign's goal of 500 new subscribers. When combined with the more than 5,700 pre-existing green power customers, about 16% of the city's residents and businesses now purchase green power. Collectively, these purchases

represent nearly 5% of the community's total electricity needs.

Due in part to the success of the challenge, which was sponsored by the city and local non-profit [Western Resource Advocates](#),²³ the U.S. Environmental Protection Agency's

¹⁸ In 2006, Xcel Energy was forced to rebate to its "Windsources" customers, because wind was the cheapest resource on the system. Recent documents released by the Colorado PUC show that the utility's projections that coal power would be the cheapest resource are wrong, and that limitations to rail capacity haul coal, rising coal prices and falling renewables costs are reversing the calculation.

¹⁹ Bonneville Environmental Foundation www.greentagsusa.org/GreenTags/faq.cfm, 19 September 2006.

²⁰ Green Power Network www.eere.energy.gov/greenpower/buying/customers.shtml, 19 September 2006.

²¹ A number of programs or initiatives have been developed in the U.S. to help address green power product credibility, such as certification programs and advertising and marketing guidelines. These programs help to verify green power marketer claims as well as to educate and inform customers about environmentally preferable competitive market choices. www.eere.energy.gov/greenpower/buying/consumer_protection.shtml, 19 September 2006.

²² Green Power Network, Large Green Purchasers Database; www.eere.energy.gov/greenpower/buying/customers.shtml?page=1&companyid=379, 19 September 2006.

²³ Western Resource Advocates, www.westernresourceadvocates.org/, 19 September 2006.

Green Power Partnership²⁴ has designated the city a "Green Power Community," making Boulder the first community in Colorado to receive this distinction. The following local renewable energy suppliers participated in the city's wind power challenge: [Clean and Green](#);²⁵ [Community Energy, Inc.](#);²⁶ [Renewable Choice Energy](#);²⁷ and Xcel Energy through its [Windsource](#)²⁸ program.²⁹

News Releases:

[Boulder exceeds goals of Wind Challenge; Becomes Green Power Community](#)³⁰

[City of Boulder challenges community to increase wind power purchases](#)³¹

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Renewable Energy Purchasing

CASE STUDY: Radnor Township, PA³²

On February 10, the [Board of Commissioners of Radnor Township](#),³³ 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, Inc.](#),³⁴ and the [Energy Cooperative of Pennsylvania](#) (ECAP),³⁵ Radnor will purchase 1.4 million kilowatt-hours of wind energy annually to be supplied by the new 66-MW

Mountaineer Wind Energy Center in West Virginia. The Mountaineer Wind Energy Center in West Virginia is the largest wind power project east of the Mississippi River.

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.

News Release:

[Radnor Township Becomes National Leader With Wind Energy Purchase](#)³⁶

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²⁴ EPA Green Power, www.epa.gov/greenpower/, 19 September 2006.
²⁵ Clean and Green, www.cleanandgreen.us/map.php, 19 September 2006.
²⁶ New Wind Energy, www.newwindenergy.com/, 19 September 2006.
²⁷ Renewable Choice, www.renewablechoice.com/, 19 September 2006.
²⁸ Xcel Energy Windsource Program, www.xcelenergy.com/XLWEB/GDA/0_3080_1-1-2_735_16310-221-2_68_133-0_00.html, 19 September 2006.
²⁹ Green Power Network, Large Green Purchasers Database; www.eere.energy.gov/greenpower/buying/customers.shtml?page=1&companyid=469, 19 September 2006.
³⁰ City Boulder Wind Challenge, www.ci.boulder.co.us/index.php?option=com_content&task=view&id=1778&Itemid=165, 29 September 2006.
³¹ City of Boulder Wind Challenge, www.bouldercolorado.gov/index.php?option=com_content&task=view&id=1273&Itemid=165, 29 September 2006.
³² Green Power Network, Large Green Purchasers Database; www.eere.energy.gov/greenpower/buying/customers.shtml?page=1&companyid=215, 19 September 2006.
³³ Radnor Township website, www.radnor.com/, 19 September 2006.
³⁴ New Wind Energy, www.newwindenergy.com/, 19 September 2006.
³⁵ Philadelphia Energy Cooperative, www.theenergyco-op.com/index.html, 19 September 2006.
³⁶ U.S. DOE Energy Power Network, www.eere.energy.gov/greenpower/buying/pr/0303_radnor_pr.html, 19 September 2006.

CASE STUDY: Los Angeles, CA

In 2003, Los Angeles Department of Water and Power LADWP decided to purchase 40 megawatts per year of renewable energy from a biomass conversion facility to be built 150 miles outside of Los Angeles in Bakersfield. Scheduled to be operational around 2008-2009, the biomass facility will provide power to up to 40,000 L.A. homes while consuming around 2,700 tons of organic waste each day in its anaerobic production facility. The organic waste will be comprised of landscaping waste materials such as grass clippings and wood chips. The overall power provided to the city of Los Angeles will be around 1.3% of its total needs and cost around \$16 million every year.

The project will also create 54 permanent new jobs and around 200 construction jobs for the two and a half year building period.³⁷ This is a great example of closing the materials loop. The waste materials reacting in the anaerobic digester will be supplied by the city. The facility will also provide its own power.

In 2004 the city passed a resolution approving a Renewable Portfolio Standard. The RPS mandates that 20% of the city's energy purchases come from renewable sources by 2017, with an interim of 13% by 2010.³⁸

L.A.'s green power purchasing program operates via voluntary donations from customers that go

toward purchasing additional renewable energy or building new renewable energy generation. With current participation, 12,000 homes are powered with renewable energy, which is enough to spare 101 million pounds of CO₂ emissions annually through the program's use of clean energy.³⁹

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³⁷ Energy Vortex, www.energyvortex.com/pages/headlinedetails.cfm?id=1114&archive=1, 19 September 2006.

³⁸ LAWDP Green Power 2005 Annual Report, www.ladwp.com/ladwp/cms/ladwp005196.pdf, also archived at, www.natcapsolutions.org/ClimateManual/Cities/Chapter5/BestBets/Utilities/LADWP_2005Report.pdf, 19 September 2006.

³⁹ Ibid.

CASE STUDY: Lenox, IA

The city of Lenox, Iowa (population approximately 1,401)⁴⁰ is considered one of the greenest cities in the U.S., deriving around 70% of its energy needs from renewable resources.⁴¹

In 2003, the city received a government grant to build a wind turbine that would supply up to 10% of the city's energy needs, on top of the already 60% that is derived from hydroelectric power. Through the city's Green Energy Program, 10% of Lenox's citizens pay an extra two dollars per month to support the renewable energy program, making it the most successful city program of its kind in the U.S. according to Patti Cale-Finnegan of the Iowa

Association of Municipal Utilities.⁴² Each two-dollar donation produces about 100 kWh and equals a savings of about 150 lbs of carbon dioxide and 14.6 lbs of sulfur dioxide.⁴³

Lenox had been planning the wind turbine for a few years before it found funding for the project. The kick came when the Iowa Department of Economic Development began looking for a city that might qualify for a \$400,000 grant for community development. In order to qualify, the city of Lenox had to have at least 51% of its population as low or moderate income, which it did.⁴⁴ It also had a viable plan for a beneficial community project at hand, a perfect match.

The turbine produces as much as 15,000 kWh per day, garnering a lot of support for renewable energy within the community. Lenox is now looking into the possibility of a biodiesel production facility, and is studying the cost-effectiveness of another wind turbine.⁴⁵

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⁴⁰ City Data, www.city-data.com/city/Lenox-iowa.html, 19 September 2006.

⁴¹ U.S. DOE Green Power Markets, www.eere.energy.gov/greenpower/markets/pr/1203_lenox_pr.html, 19 September 2006.

⁴² Ibid.

⁴³ Ibid.

⁴⁴ Energy Services Bulletin, www.wapa.gov/es/pubs/esb/2004/feb/feb043.htm, 19 September 2006.

⁴⁵ Ibid.

Additional Resources

The Interstate Renewable Energy Council's website contains a wealth of useful information on municipal purchasing and implementation of renewable energy programs. www.irecusa.org/

EPA's Green Power Partner Resources is designed to help partners make the most of their green power purchase. Included are resources and information on how to:

- Partner tools
- Promoting your actions
- Communicating the environmental benefits of green power
- Communication support

These resources include purchasing guide, green power locator, communications guide, fact sheets, media tools, etc.

www.epa.gov/greenpower/partner_corner/index.htm

DSIRE is a comprehensive source of information on state, local, utility, and federal incentives that promote renewable energy and energy efficiency. www.dsireusa.org

Top Ten Green Power Programs as of 2005⁴⁶

Green Power Program Renewable Energy Sales (as of December 2005)				
Rank	Utility	Resources Used	Sales (kWh/year)	Sales (Avg. MW ^a)
1	Austin Energy	Wind, landfill gas	435,140,739	49.7
2	Portland General Electric ^b	Existing geothermal and hydro, wind	339,577,170	38.8
3	PacifiCorp ^{cd}	Wind, biomass, solar	234,163,591	26.7
4	Florida Power & Light	Biomass, wind, solar	224,574,530	25.6
5	Sacramento Municipal Utility District ^e	Wind, landfill gas, small hydro, solar	195,081,504	22.3
6	Xcel Energy ^{ef}	Wind	147,674,000	16.9
7	National Grid ^{ghi}	Biomass, wind, small hydro, solar	127,872,457	14.6
8	Basin Electric Power Cooperative	Wind	113,957,000	13.0
9	Puget Sound Energy	Wind, solar, biogas	71,341,000	8.1
10	OG&E Electric Services	Wind	63,591,526	7.3

Source: NREL

Notes:

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

^b Some products marketed in partnership with Green Mountain Energy Company.

^c Includes Pacific Power and Utah Power.

^d Some Oregon products marketed in partnership with 3 Phases Energy Services.

^e Product is *Green-e* certified (www.green-e.org). For Xcel Energy, only the Public Service Company of Colorado product is *Green-e* certified.

^f Includes Northern States Power, Public Service Company of Colorado, and Southwestern Public Service.

^g Includes Niagara Mohawk, Massachusetts Electric, Narragansett Electric, and Nantucket Electric

^h Marketed in partnership with Community Energy, EnviroGen, Green Mountain Energy Company, Mass Energy, People's Power & Light, and Sterling Planet

ⁱ Some products are certified by *Green-e* (www.green-e.org) or Environmental Resources Trust (www.ert.net).



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⁴⁶NREL has compiled extensive data on utility green power programs and produced the following "Top Ten" lists of program characteristics and results: total sales of renewable energy to program participants; total number of customer participants; customer participation rates; and the premium charged to support new renewable development. www.eere.energy.gov/greenpower/resources/tables/pdfs/0306_top10_pr.pdf, also archived at, www.natcapsolutions.org/ClimateManual/Cities/Chapter5/BestBets/Utilities/GreenPricingProgram_NREL2005.pdf, 27 September 2006.