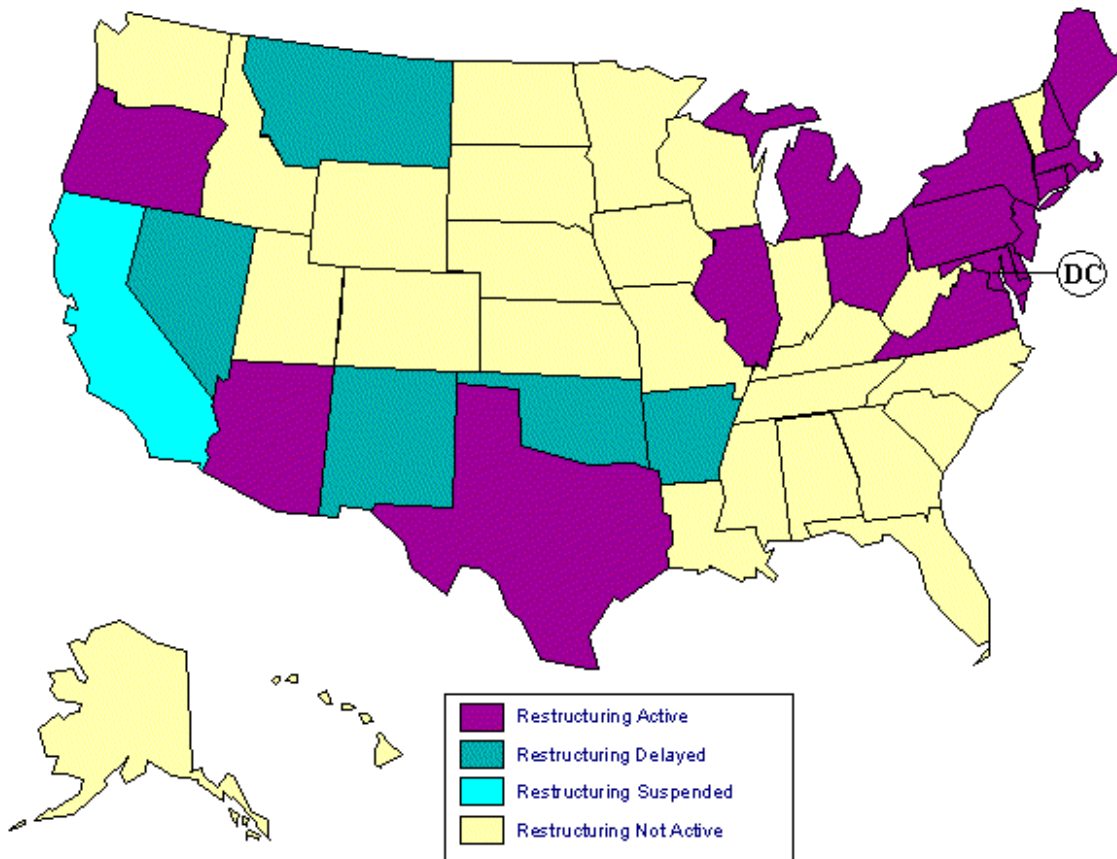


3.1 – States with Competitive Electricity Markets

Purple-colored states (**Figure 3.1.1**) are active in the restructuring process, and these states have either enacted enabling legislation or issued a regulatory order to implement retail access. Retail access is either currently available to all or some customers. Those states are Arizona, Connecticut, Delaware, District of Columbia, Illinois, Maine, Maryland, Massachusetts, Michigan, New Hampshire, New Jersey, New York, Ohio, Oregon, Pennsylvania, Rhode Island, Texas, and Virginia. In Oregon, the law allows nonresidential customers retail access.

A green-colored state signifies a delay in the restructuring process or the implementation of retail access. Those states are Arkansas, Montana, Nevada, New Mexico, and Oklahoma.

California is the only blue-colored state, because direct retail access has been suspended.

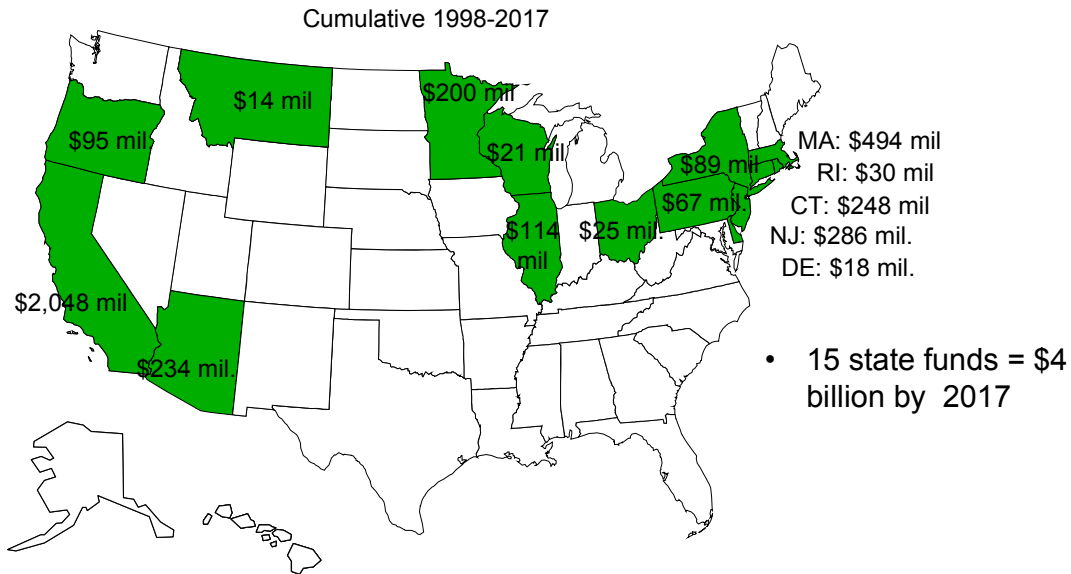


Source: U.S. DOE, Energy Information Administration, last updated February 2003.

Figure 3.1.1: Status of Restructuring of State Electricity Markets

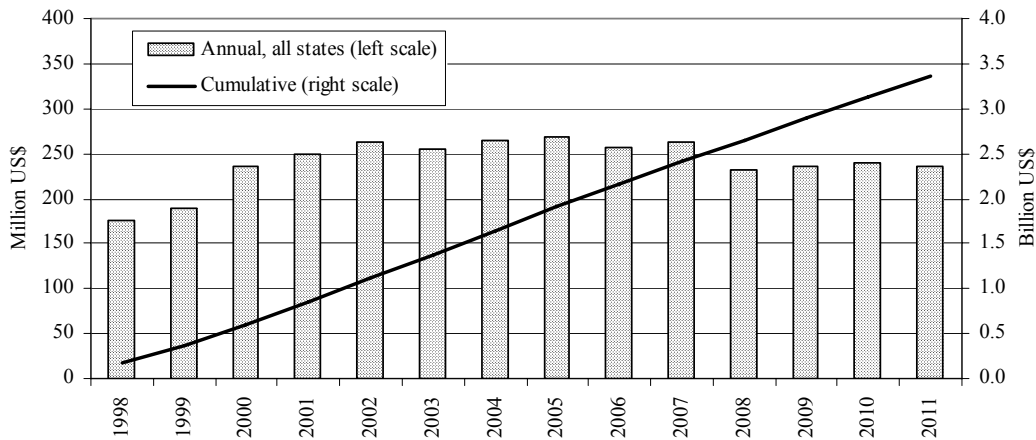
3.2 – States with System Benefit Charges (SBC)

A System Benefit Charge (SBC) is a small fee added to a customer’s electricity bill used to fund programs that benefit the public, such as low-income energy assistance, energy efficiency, and renewable energy. There are 15 states with SBCs (**Table 3.2.1**) through which a portion of the money will be used to support renewable resources. Together, these states will collect about \$4 billion (**Figure 3.2.1**) in funds to support renewable resources between 1998 and 2017.



Source: Union of Concerned Scientists, June 2004
http://www.ucsusa.org/clean_energy/clean_energy_policies/state-clean-energy-maps-and-graphs.html

Figure 3.2.1: State System Benefit Funds



Source: Bolinger, M., R. Wiser, L. Milford, M. Stoddard, and K. Porter. *Clean Energy Funds: An Overview of State Support for Renewable Energy*, Lawrence Berkeley National Laboratory, April 2001.

Figure 3.2.2: Aggregation Annual and Cumulative State Funding

Table 3.2.1: Renewable Energy Funding Levels and Program Duration

State	Approximate Annual Funding (\$ Million)	\$ Per-Capita Annual Funding	\$ Per-MWh Funding	Funding Duration
CA	135	4.0	0.58	1998 - 2012
CT	15 → 30	4.4	0.50	2000 - indefinite
DE	1 (maximum)	1.3	0.09	10/1999 - indefinite
IL	5	0.4	0.04	1998 - 2007
MA	30 → 20	4.7	0.59	1998 - indefinite
MN	9	N/A	N/A	2000 - indefinite
MT	2	2.2	0.20	1999 - 7/2003
NJ	30	3.6	0.43	2001 - 2008
NM	4	2.2	0.22	2007 - indefinite
NY	6 → 14	0.7	0.11	7/1998 - 6/2006
OH	15 → 5 (portion of)	1.3	0.09	2001 - 2010
OR	8.6	2.5	0.17	10/2001 - 9/2010
PA	10.8 (portion of)	0.9	0.08	1999 - indefinite
RI	2	1.9	0.28	1997 - 2003
WI	1 → 4.8	0.9	0.07	4/1999 - indefinite

Note: Annual and per-MWh funding are based on funds expected in 2001.

Source: Bolinger et al., 2001

SBC funding, so far, has supported the development of 707 MW of generating capacity that is online. A further 1,548 MW of new capacity is still pending for a total of 163 different projects. Nationwide, there is currently about \$345 million in funding obligated through the respective SBC programs (**Table 3.2.2**).

**Table 3.2.2: State SBC Funding for Utility-Scale Renewable Projects
(as of September 2004)**

Project Location	# of Projects	Original Dollars Obligated (\$)	Current Dollars Obligated (\$)	Capacity Obligated (MW)	Capacity Cancelled (MW)	Capacity Pending (MW)	Capacity On-Line (MW)
CA	60	\$243,573,376	\$193,019,993	1,285.3	30.6	830.1	424.5
IL	4	\$9,305,000	\$9,305,000	101.6	0.0	51.2	50.4
MA	4	\$19,469,093	\$19,469,093	49.6	0.0	49.6	0.0
MN	68	\$61,841,977	\$61,841,977	124.9	1.7	91.7	31.5
NH*	1	\$2,378,930	\$2,378,930	50.0	0.0	50.0	0.0
NJ	5	\$14,590,000	\$14,590,000	41.1	0.0	41.4	0.0
NY	12	\$26,560,000	\$26,560,000	325.2	0.0	283.6	41.6
OR	1	\$3,800,000	\$3,800,000	41.0	0.0	0.0	41.0
PA	8	\$17,600,000	\$14,000,000	269.6	0.0	151.1	118.5
Total	163	\$399,118,376	\$344,964,993	2,288.1	32.3	1,548.4	707.4

*New Hampshire does not currently have a clean energy fund. The single project located in New Hampshire is receiving support from Massachusetts' clean energy fund.

Source: Bolinger, M., R. Wiser, and G. Fitzgerald, 2004. *The Impact of State Clean Energy Fund Support for Utility-Scale Renewable Energy Projects*. Prepared by Lawrence Berkeley National Laboratory and the Clean Energy States Alliance, October. http://www.cleanenergystates.org/CaseStudies/LBNL-56422_Utility-Scale_Renewables.pdf

Of the 163 projects announced, the vast majority – both in terms of number of projects and generating capacity – are wind power projects (**Table 3.2.3**). In descending order of capacity are geothermal, landfill gas, biomass, hydropower, waste tire, and digester gas.

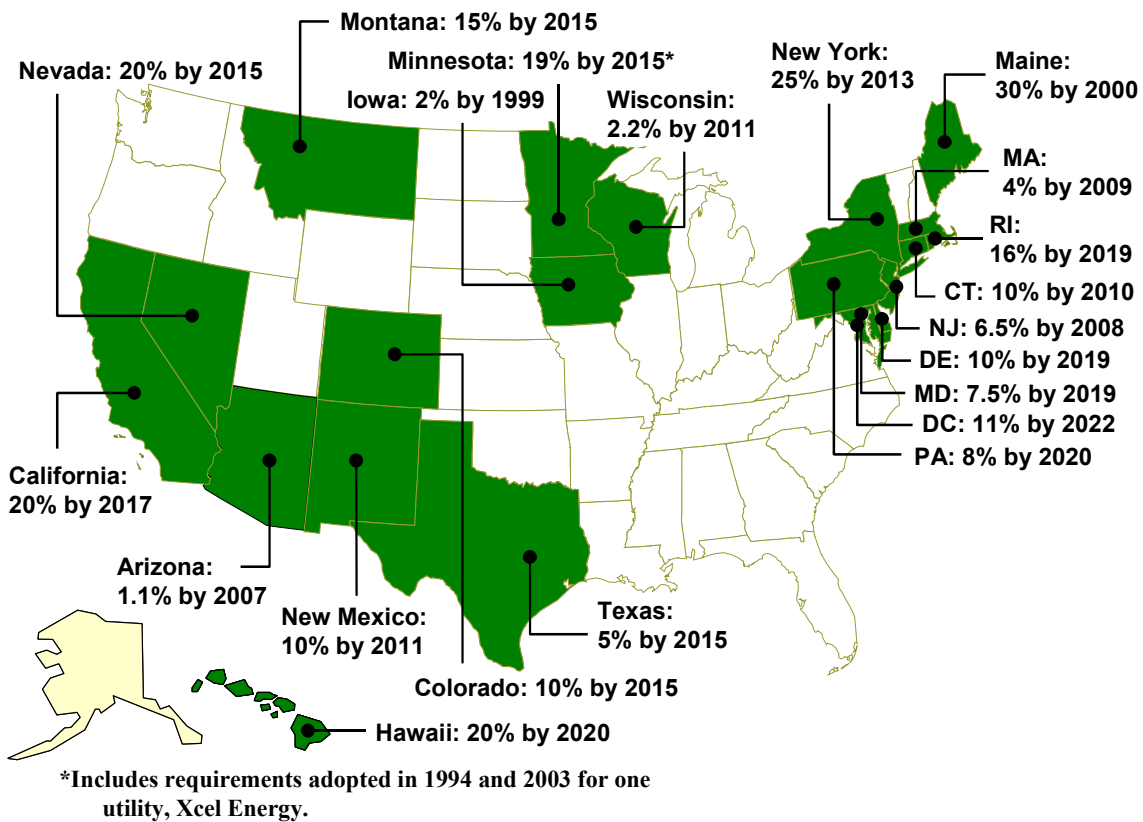
**Table 3.2.3: Support for Utility-Scale Renewable Projects by Resource Type
(as of September 2004)**

Resource Type	# of Projects	Original Dollars Obligated (\$)	Current Dollars Obligated (\$)	Capacity Obligated (MW)	Capacity Cancelled (MW)	Capacity Pending (MW)	Capacity On-Line (MW)
Biomass	8	\$15,406,770	\$11,466,832	85.2	9.5	64.4	11.3
Digester Gas	3	\$4,108,210	\$4,108,210	6.0	0.0	3.9	2.1
Geothermal	4	\$80,331,618	\$80,331,618	156.9	0.0	97.9	59.0
Hydro	7	\$12,977,258	\$11,787,988	45.7	0.0	14.5	31.3
Landfill Gas	28	\$38,108,552	\$31,098,469	90.7	19.8	35.1	35.8
Waste Tire	1	\$7,232,413	\$3,287,461	30.0	0.0	30.0	0.0
Wind	112	\$240,953,555	\$202,884,417	1,873.60	3.0	1,302.6	568.0
Total	163	\$399,118,376	\$344,964,993	2,288.1	32.3	1,548.4	707.4

Source: Bolinger, M., R. Wiser, and G. Fitzgerald, 2004. *The Impact of State Clean Energy Fund Support for Utility-Scale Renewable Energy Projects*. Prepared by Lawrence Berkeley National Laboratory and the Clean Energy States Alliance, October. http://www.cleanenergystates.org/CaseStudies/LBNL-56422_Utility-Scale_Renewables.pdf

3.3 – States with Renewable Portfolio Standards (RPS)

A Renewable Portfolio Standard (RPS) is a policy that obligates a retail electricity supplier to include renewable resources in its electricity-generation portfolio. Retail suppliers can meet the obligation by constructing or owning eligible renewable resources or purchasing the power from eligible generators. To date, 20 states plus Washington, D.C., have adopted RPS policies (Table 3.3.1) or renewable purchase obligations (Figure 3.3.1), while several other states have adopted nonbonding renewable energy goals (Table 3.3.2). In addition, a number of states have increased their renewable energy standards in recent years. In conjunction with system benefits funds, RPS policies are expected to lead to the development of more than 29,000 MW of new renewable energy capacity by 2017 (Figure 3.3.2).



Source: NREL/Union of Concerned Scientists, October 2005

Figure 3.3.1: Renewable Portfolio Standards and Renewables Purchase Obligations by State

Table 3.3.1: State Renewable Portfolio Standards and Purchase Requirements

State	Purchase Requirements	Eligible Resources	Credit Trading	Penalties
AZ	15% by 2015 (of this 30% must be customer sited)	PV and solar thermal electric, R&D, solar hot water, and in-state landfill gas, wind, and biomass.	No central credit trading system	Under consideration
CA	Investor-owned utilities must add minimum 1% annually to 20% by 2017.	Biomass, solar thermal, photovoltaic, wind, geothermal, existing hydro < 30MW, fuel cells using renewable fuels, digester gas, landfill gas, ocean energy.	WREGIS system under development	At discretion of CPUC
CO	10% by 2015	Photovoltaics, Landfill Gas, Wind, Biomass, Geothermal Electric, Anaerobic Digestion, Small Hydroelectric, Fuel Cells (Renewable Fuels)	WREGIS system under development	To be determined
CT	3% Class I or II Technologies by Jan 1, 2004 Class I 1% Jan 1, 2004 increasing to 1.5% by 2005, 2% by 2006, 3.5% by 2007, 5% by 2008, 6% by 2009, and 7% by Jan 1, 2010	Class I: solar, wind, new sustainable biomass, landfill gas, fuel cells, ocean thermal, wave, tidal, advanced renewable energy conversion technologies, new run of river hydro (<5 MW). Class II: licensed hydro, MSW, and other biomass.	Yes. Using NEPOOL Generation Information System.	Penalty of 5.5¢/kWh paid to the Renewable Energy Investment Fund for the development of Class I renewables
DE	10% by 2019	Solar Thermal Electric, Photovoltaics, Landfill Gas, Wind, Biomass, Hydroelectric, Geothermal Electric, Anaerobic Digestion, Tidal Energy, Wave Energy, Ocean Thermal, Fuel Cells (Renewable Fuels)	Yes. GATS	Penalty of 2.5¢/kWh (increases to 5¢/kWh for multi-year noncompliance)
DC	11% by 2022 (0.386% solar)	Solar Thermal Electric, Photovoltaics, Landfill Gas, Wind, Biomass, Hydroelectric, Geothermal Electric, Municipal Solid Waste, Cofiring, Tidal Energy, Wave Energy, Ocean Thermal	Yes. GATS. Electric delivery requirement to PJM	Penalty of 2.5¢/kWh for tier 1 resources, 1¢/kWh for tier II, and 30¢/kWh for PV
HI	8% by end of 2005, 10% by 2010, 15% by 2015 and 20% by 2020	Wind, solar, hydropower, biomass including landfill gas, waste to energy, and fuels derived from organic sources, geothermal, ocean energy, fuel cells using hydrogen from renewables	No	Unspecified; standard to be revisited if utilities can not meet it in cost-effective manner
IA	Investor-owned utilities to purchase 105 MW (~2% of 1999 sales)	Solar, wind, methane recovery, and biomass	No	Unspecified
ME	30% of retail sales in 2000 and thereafter. PUC will revisit within 5 years.	Fuel cells, tidal, solar, wind, geothermal, hydro, biomass, and MSW (< 100MW); high efficiency cogeneration. Self-generation is not eligible. Resource supply under this definition exceeds RPS requirement.	Yes. NEPOOL Generation Information System.	Possible sanctions at discretion of PUC

State	Purchase Requirements	Eligible Resources	Credit Trading	Penalties
MD	3.5% by 2006 with 1% from Tier 1 sources, Tier 1 increasing by 1% every other year from 2007 to 2018, Tier II remains at 2.5%, 7.5% total by 2019 and in subsequent years	Tier 1: solar, wind, geothermal, qualifying biomass, small hydropower (<30MW), and landfill methane Tier II: existing large hydropower, poultry litter incineration, existing waste to energy	Yes	Alternative Compliance fee of 2¢/kWh for Tier 1 and 1.5¢/kWh for Tier 2 paid to Maryland Renewable Energy Fund
MA	1% of sales to end-use customers from new renewables in 2003, +0.5%/yr to 4% in 2009 1%/yr increase thereafter until determined by Division of Energy Resources	New renewables placed into commercial operation after 1997, including solar, wind, ocean thermal, wave, tidal, fuel cells using renewable fuels, landfill gas, and low-emission advanced biomass. Excess production from existing generators over historical baseline eligible.	Yes. Using NEPOOL Generation Information System.	Entities may comply by paying 5¢/kWh. Non-complying retailers must submit a compliance plan. Revocation or suspension of license is possible.
MN	(Not true RPS) Applies to Xcel Energy only: 425 MW wind by 2002 and 110 MW biomass. Additional 400 MW wind by 2006 and 300 MW by 2010	Wind, biomass.	No, other than standard regulatory oversight.	No
MT	5% in 2008; 10% in 2010; 15% in 2015	Solar Thermal Electric, Photovoltaics, Landfill Gas, Wind, Biomass, Hydroelectric, Geothermal Electric, Anaerobic Digestion, Fuel Cells (Renewable Fuels)	Yes. Electricity must be delivered to MT.	Penalty of 1¢/kWh goes to universal low-income energy assistance fund.
NV	6% in 2005, rising to 20% by 2015. Minimum 5% must come from solar.	Solar, wind, geothermal, & biomass (includes agricultural waste, wood, MSW, animal waste and aquatic plants). Distributed resources receives extra credit (1.15).	Yes.	Financial penalties may be applied for noncompliance.
NJ	Class I or II: 2.5% by 2008 Class I: 4% by 2008, with solar requirement of 0.16% retail sales (90MW) Goal of 20% by 2020.	Class I.: Solar, PV, wind, fuel cells, geothermal, wave, tidal, landfill methane, and sustainable biomass. Class II: hydro <30 MW and MSW facilities that meet air pollution requirements.	Yes. GATS.	Alternative Compliance Payment of 5¢/kWh, 30¢/kWh for solar.
NM	5% of retail sales by 2006. Increase by 1%/yr to 10% by January 1,	Solar, wind, hydro (<=5 MW), biomass, geothermal, and fuel cells. 1 kWh solar = 3kWh; 1	Yes. RECs valid for 4 years from date of issuance.	At discretion of PUC.

State	Purchase Requirements	Eligible Resources	Credit Trading	Penalties
	2011 and thereafter.	kWh biomass, geothermal, landfill gas, or fuel cells =2 kWh toward compliance		
NY	25% by 2013; 1% voluntary standard; 2% of total incremental RPS requirement (7.71%) is set-aside for customer-sited	Photovoltaics, Landfill Gas, Wind, Biomass, Hydroelectric, Fuel Cells, CHP/Cogeneration, Biogas, Liquid Biofuel, Anaerobic Digestion, Tidal Energy, Wave Energy, Ocean Thermal	Possibly. Electricity must be delivered to NY.	Unspecified.
PA	18% by 2020; 8% Tier 1 and 10% Tier II Solar set-aside of 0.5% by 2020	Solar Water Heat, Solar Space Heat, Solar Thermal Electric, Solar Thermal Process Heat, Photovoltaics, Landfill Gas, Wind, Biomass, Hydroelectric, Geothermal Electric, Fuel Cells, Municipal Solid Waste, CHP/Cogeneration, Waste Coal, Coal Mine Methane, Coal Gasification, Anaerobic Digestion, Other Distributed Generation Technologies	Yes. GATS	Penalty of 4.5¢/kWh, for solar penalty is 200% of PV REC value.
RI	16% by 2020; 3% by 2003, increasing 0.5% annually 2008-2010, increasing 1% annually 2011-2014, increasing 1.5% annually 2015-2019	Solar, wind, eligible biomass, including co-firing, geothermal, small hydropower, ocean, fuel cells using hydrogen derived from renewables	Yes. NEPOOL Generation Information System.	Penalty of 5¢/kWh can be made to Renewable Energy Development Fund
TX	5880 MW by 2015 (5000 MW new) Target of at least 500 MW from renewables other than wind	Solar, wind, geothermal, hydro, wave, tidal, biomass, including landfill gas. New (operational after Sept. 1, 1999) or small (<2MW) facilities eligible.	Yes. ERCOT REC Trading System.	Lesser of 5¢/kWh or 200% of average market value of renewable energy credits.
WI	0.5% by 2001 increasing to 2.2% by 2011 (0.6% can come from facilities installed prior to 1998).	Wind, solar, biomass, geothermal, tidal, fuel cells that use renewable fuel, & hydro under 60 MW. Eligibility may be extended by PUC.	Yes. Utilities with excess RECs can trade or bank them.	Penalty of \$5,000-\$500,000 is allowed in legislation.

Source: Table updated by NREL, March 2006. Derived from table in Wisser, R. Porter, K., Grace, R., Kappel, C. *Creating Geothermal Markets: Evaluating Experience with State Renewables Portfolio Standards*, report prepared for the National Geothermal Collaborative, 2003.

Table 3.3.2: State Renewable Energy Goals (Nonbinding)

State	Purchase Requirements	Eligible Resources
Illinois	8% by 2013 (75% wind)	Solar Water Heat, Solar Thermal Electric, Photovoltaics, Landfill Gas, Wind, Biomass, Hydroelectric, CHP/Cogeneration, "Other Such Alternative Sources of Environmentally Preferable Energy"
Minnesota	1% by 2005 increasing by at least 1%/year to 10% by 2015	Wind, solar, hydro (<60 MW), and biomass
Vermont	Meet growth in electricity demand from 2005-2013 with renewable energy sources (becomes mandatory in 2013 if not met).	Solar Thermal Electric, Photovoltaics, Landfill Gas, Wind, Biomass, Hydroelectric, Anaerobic Digestion, Fuel Cells (Renewable Fuels)

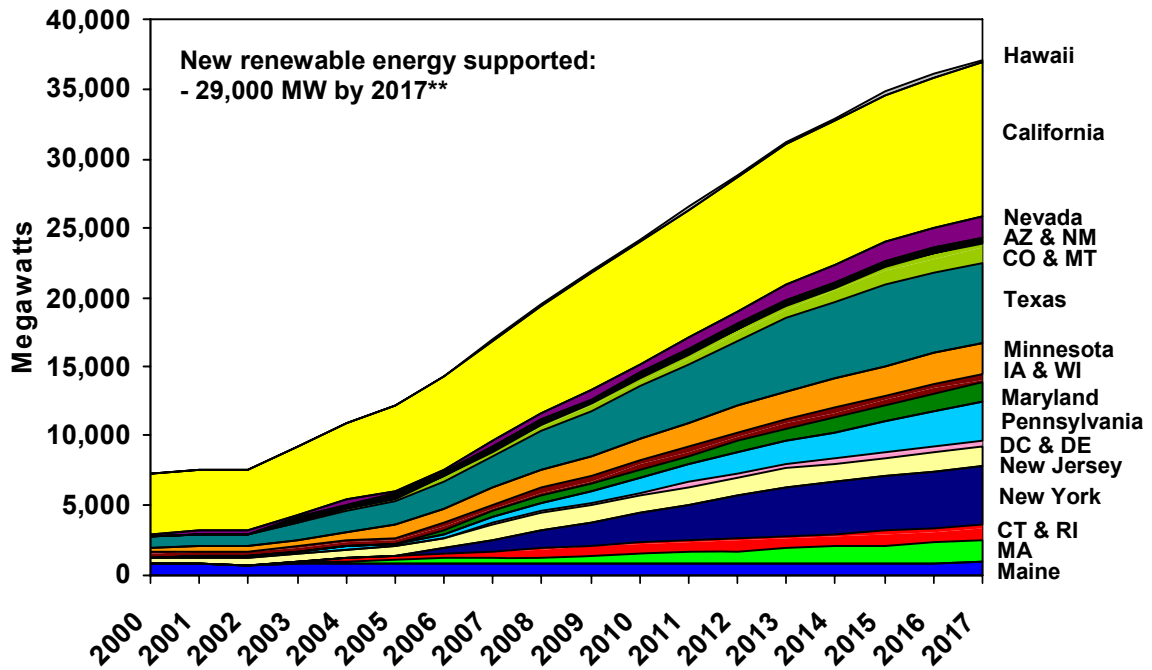
Source: NREL, March 2006.

Nationwide the RPS requirements for renewable energy are estimated to total 2,335 MW of generating capacity. The vast majority (93.5%) is wind power, followed by biomass (2.3%), landfill gas (2.3%), hydropower (1.3%), solar energy (0.4%), and other (0.3%). The five largest states in terms of capacity are Texas, Minnesota, Iowa, California, and Wisconsin.

Table 3.3.3 Estimated Renewable Energy Capacity Satisfying RPS Requirements Through 2003 (Megawatts, Nameplate Capacity)

State	Biomass	Hydro	Landfill Gas	Solar Photovoltaics	Wind	Other/Unknown	Total
Arizona	0	0	5	9	0	0	14
California	0	20	6	0	175	0	201
Connecticut	0	0	0	0	0	0	0
Maine	0	0	0	0	0	0	0
Massachusetts	0	0	8	0	1	0	9
Nevada	0	0	0	0	0	0	0
New Jersey	0	0	0	0	0	0	0
New Mexico	0	0	0	0	0	0	0
Wisconsin	0	0	3	0	94	0	97
Iowa	16	0	0	0	237	7	260
Minnesota	25	0	0	0	476	0	501
Texas	5	10	31	0.2	1,140	0	1,186
Wisconsin	7	0	0	0	50	0	57
Hawaii	0	0	0	0	0	0	0
Illinois	0	0	0	0	0	0	0
Minnesota	0	0	0	0	0	0	0
Pennsylvania	0	0	0	0	10	0	10
Total	53	30	53	9.2	2,183	7	2,335
Share of Total	2.3%	1.3%	2.3%	0.4%	93.5%	0.3%	100.0%

Source: Petersick, T. 2004. *State Renewable Energy Requirements and Goals: Status Through 2003*, U.S. DOE Energy Information Administration, July <http://www.eia.doe.gov/oiaf/analysispaper/rps/index.html>



*Projected development assuming states achieve annual RES targets.
 **If achieved, IA, IL, and MN goals would support an additional 5,300 MW by 2017.

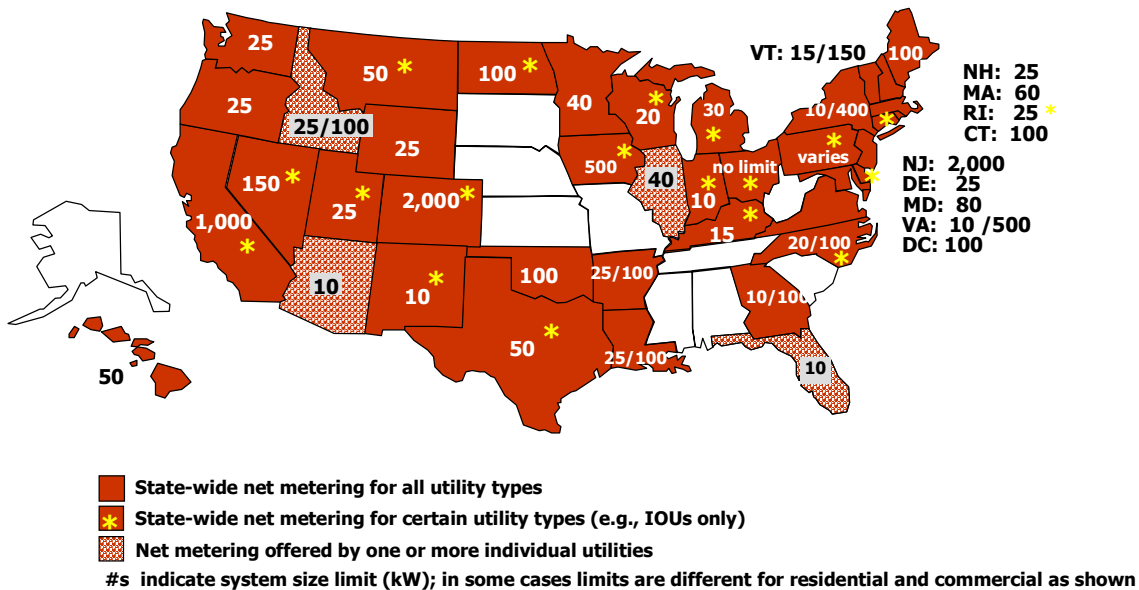
Source: Union of Concerned Scientists, November 2005.

Figure 3.3.2: The Future Impact of State Purchase Mandates and Renewable Energy Funds

3.4 – States with Net Metering Policies

Net metering allows customers with generating facilities to turn their electric meters backward when their systems are producing energy in excess of their on-site demand. In this way, net metering enables customers to use their own generation to offset their consumption over a billing period. This offset means that customers receive retail prices for the excess electricity they generate. Without net metering, a second meter is usually installed to measure the electricity that flows back to the provider, with the provider purchasing the power at a rate much lower than the retail rate.

Most states have some type of net metering policy (**Figure 3.4.1**). Of the states that do have net metering policies (**Table 3.4.1**) the policies vary significantly in terms of the maximum amount of capacity a consumer is permitted to net meter varies from 10 kW to 2,000 kW. Some states only require certain types of utilities to offer net metering, exempting others.



Source: DSIRE database, January 2006
<http://www.dsireusa.org/library/includes/topic.cfm?TopicCategoryID=6&CurrentPageID=10>

Figure 3.4.1: Net Metering Policies by State

Table 3.4.1: Summary of State Net Metering Policies

Program	System Size Limit/ Customer Classes Eligible	Eligible Technologies	Limit on Total Capacity	Treatment of Net Excess Generation (NEG)	Interconnection Standards for Net Metering	Utilities Involved
Arizona – Salt River Project	10 kW / Residential	Photovoltaics	None	Purchased monthly by utility at average monthly market price minus a price adjustment of \$0.00017/kWh	(Utility guidelines)	Salt River Project
Arizona – Tucson Electric Power	10 kW / Commercial, Residential	Photovoltaics, Wind	500 kW peak aggregate	Credited at retail rate to customer's next bill; granted to utility at end of 12-month billing cycle	(Utility guidelines)	Tucson Electric Power
Arkansas	25 kW for residential systems; 100 kW for commercial systems	Solar, Wind, Biomass, Hydro, Geothermal, Fuel Cells, Microturbines	None	Granted to utility monthly	Yes	All utilities
California	1 MW (three biogas digesters up to 10 MW per unit may net meter) / Commercial, Industrial, Residential	Photovoltaics, Landfill Gas, Wind, Anaerobic Digestion, Fuel Cells	0.5% of a utility's peak demand (separate limit of 50 MW for SDG&E)	Credited at retail rate to customer's next bill; granted to utility at end of 12-month billing cycle	Yes	All utilities ¹
Colorado	2 MW / Commercial, Industrial, Residential	Solar, Landfill Gas, Wind, Biomass, Anaerobic Digestion, Small Hydro, Fuel Cells (Renewable Fuels)	None	Credited at retail rate to customer's next bill; at end of each calendar year, customer reimbursed for NEG at utility's average hourly incremental cost for the prior 12-month period	Yes	Colorado utilities serving 40,000 or more customers
Colorado – Fort Collins Utilities	10 kW / Residential	Photovoltaics, Wind	25 customers	Credited at retail rate to customer's next bill; granted to utility at end of	Yes	Fort Collins Utilities

¹ In California, all utilities – with the exception of Los Angeles Department of Water & Power (LADWP) -- must offer net metering to customers with PV and wind-energy systems. (LADWP offers net metering voluntarily.) In addition, investor-owned utilities must offer net metering to customers with fuel cells and biomass-energy systems.

Program	System Size Limit/ Customer Classes Eligible	Eligible Technologies	Limit on Total Capacity	Treatment of Net Excess Generation (NEG)	Interconnection Standards for Net Metering	Utilities Involved
				12-month billing cycle		
Colorado – Gunnison County Electric	10 kW / Commercial, Residential	Photovoltaics, Wind	50 customers	Purchased by utility at wholesale rate	Yes	Gunnison County Electric
Colorado – Holy Cross Energy	None / Commercial, Industrial, Residential	Photovoltaics, Wind, Biomass, Hydro, Geothermal	25 kW	Credited at retail rate to customer's next bill; purchased by utility at wholesale rate at end of 12-month billing cycle	Yes	Holy Cross Energy
Connecticut	100 kW for renewables; 50 kW for fossil fuels / Residential, Commercial	Solar, Landfill Gas, Wind, Biomass, Fuel Cells, Municipal Solid Waste, Small Hydro, Tidal Energy, Wave Energy, Ocean Thermal	None	Purchased by utility at spot-market energy rate	Yes	Investor-owned utilities only
Delaware	25 kW / Commercial, Residential	Solar, Wind, Biomass, Hydro, Geothermal	None	Varies by utility	Yes	All utilities (applies to municipal utilities if they opt to compete outside their limits)
District of Columbia	100 kW / Commercial, Industrial, Residential	Renewables (unspecified), Fuel Cells, Microturbines, CHP	None	Credited at retail rate to customer's next bill	Yes (under development)	All utilities
Florida – JEA	10 kW / Residential	Photovoltaics, Wind	None	Credited at retail rate to customer's next bill	(Utility guidelines)	JEA
Florida – New Smyrna Beach Utilities	10 kW / Commercial, Industrial, Residential	Photovoltaics	None	Credited at retail rate to customer's next bill	(Utility guidelines)	New Smyrna Beach Utilities
Georgia	100 kW for commercial systems; 10 kW for residential systems;	Photovoltaics, Wind, Fuel Cells	0.2% of a utility's annual peak demand	Credited at retail rate to customer's next bill; granted to utility at end of 12-month billing	Yes	All utilities

Program	System Size Limit/ Customer Classes Eligible	Eligible Technologies	Limit on Total Capacity	Treatment of Net Excess Generation (NEG)	Interconnection Standards for Net Metering	Utilities Involved
				cycle		
Hawaii	50 kW / Commercial, Residential, Government	Photovoltaics, Wind, Biomass, Hydro	0.5% of a utility's annual peak demand	Credited at retail rate to customer's next bill; granted to utility at end of 12-month billing cycle	Yes	All utilities
Idaho – Idaho Power	100 kW for large commercial and agricultural; 25 kW for residential and small commercial	Photovoltaics, Wind, Biomass, Hydro, Fuel Cells	2.9 MW (0.1% of utility's 2000 peak demand)	Purchased monthly by utility at retail rate for residential and small commercial customers; purchased at 85% of Dow Jones index price for non-firm energy for large commercial and agricultural customers	(Utility guidelines)	Idaho Power
Idaho – Utah Power & Light	100 kW for large commercial and irrigation; 25 kW for residential and small commercial	Solar, Wind, Biomass, Hydro	714 kW (0.1% of utility's Idaho retail peak demand in 2002)	Purchased monthly by utility at retail rate for residential and small commercial customers; purchased at 85% of Dow Jones index price for non-firm energy for large commercial and agricultural customers	(Utility guidelines)	Utah Power & Light
Idaho – Avista Utilities	25 kW / Commercial, Residential, Agricultural	Solar, Wind, Biomass, Hydro, Fuel Cells	1.52 MW (0.1% of utility's 1996 peak demand)	Credited at retail rate to customer's next bill; granted to utility at end of 12-month billing cycle	(Utility guidelines)	Avista Utilities
Illinois – ComEd Wind and PV Generation Program	40 kW / All retail customers	Photovoltaics, Wind	0.1% of utility's annual peak demand	Purchased monthly by utility at avoided-cost rate; customer receives an annual incentive payment for production	(Utility guidelines)	ComEd

Program	System Size Limit/ Customer Classes Eligible	Eligible Technologies	Limit on Total Capacity	Treatment of Net Excess Generation (NEG)	Interconnection Standards for Net Metering	Utilities Involved
Indiana	10 kW / Residential, Schools	Photovoltaics, Wind, Small Hydro	0.1% of a utility's most recent peak summer load	Credited at retail rate to customer's next bill	Yes	Investor-owned utilities
Iowa	500 kW / Commercial, Industrial, Residential	Photovoltaics, Wind, Biomass, Hydro, Municipal Solid Waste	None	Credited at retail rate to customer's next bill	No	Investor-owned utilities
Kentucky	15 kW Commercial, Residential, Nonprofit, Schools, Agricultural, Institutional, Government	Photovoltaics	0.1% of a utility's single-hour peak load during the previous year	Credit at retail rate to customer's next bill (no expiration)	Yes	Investor-owned utilities, cooperatives
Louisiana	100 kW for commercial and agricultural systems; 25 kW for residential systems	Photovoltaics, Wind, Biomass, Hydro, Geothermal, Fuel Cells (Renewable Fuels), Microturbines	None	Credited at retail rate to customer's next bill indefinitely	Yes	All utilities
Maine	100 kW / Commercial, Industrial, Residential	Solar, Wind, Biomass, Hydro, Geothermal, Fuel Cells, Municipal Solid Waste, CHP, Tidal Energy	None	Credited at retail rate to customer's next bill; granted to utility at end of 12-month billing cycle	No	All utilities
Maryland	200 kW (500 kW with MD PSC permission) / Commercial, Residential, Schools, Government	Photovoltaics, Wind, Biomass	34.7 MW (0.2% of state's adjusted peak load in 1998)	To be determined by MD Public Service Commission	Yes	All utilities
Massachusetts	60 kW / Commercial, Industrial, Residential	Renewables, CHP, Fuel Cells	None	Credited at average monthly market rate to customer's next bill	Yes	All utilities
Michigan	30 kW / Commercial, Industrial, Residential, Nonprofit, Schools,	Solar, Wind, Biomass, Hydro, Geothermal, Municipal Solid Waste	0.1% of a utility's peak load or 100 kW (whichever is greater)	Credited at retail rate to customer's next bill; granted to utility at end of 12-month billing	Yes	Various utilities (voluntary participation)

Program	System Size Limit/ Customer Classes Eligible	Eligible Technologies	Limit on Total Capacity	Treatment of Net Excess Generation (NEG)	Interconnection Standards for Net Metering	Utilities Involved
	Government, Agricultural, Institutional			cycle		
Minnesota	40 kW / Commercial, Industrial, Residential	Photovoltaics, Wind, Biomass, Hydro, Municipal Solid Waste, CHP	None	Purchased at average retail utility energy rate	Yes	All utilities
Montana	50 kW / Commercial, Industrial, Residential	Photovoltaics, Wind, Hydro	None	Credited at retail rate to customer's next bill; granted to utility at end of 12-month billing cycle	Yes	Investor-owned utilities
Montana – Montana Electric Cooperatives	10 kW / Commercial, Residential	Photovoltaics, Wind, Geothermal, Fuel Cells, Small Hydro	None	Credited at retail rate to customer's next bill; granted to utility at end of 12-month billing cycle	Yes	Most of MEC's 26 member cooperatives
Nevada	150 kW ² / Commercial, Industrial, Residential	Solar, Wind, Biomass, Hydro, Geothermal	1% of a utility's peak capacity	Credited at retail rate to customer's next bill; no expiration ³	Yes	Investor-owned utilities
New Hampshire	25 kW / Commercial, Industrial, Residential	Photovoltaics, Wind, Hydro	0.05% of a utility's peak demand	Credited at retail rate to customer's next bill	Yes	All utilities
New Jersey	2 MW / Commercial, Residential	Solar, Wind, Biomass, Hydro, Geothermal, Fuel Cells (Renewable Fuels), Tidal Energy, Wave Energy	None	Credited at retail rate to customer's next bill; purchased by utility at avoided-cost rate at end of 12-month billing cycle	Yes	All utilities
New Mexico	10 kW / Commercial, Industrial, Residential	Solar, Wind, Biomass, Hydro, Geothermal, Fuel Cells, Municipal Solid Waste,	None	Credited to customer's next bill or purchased by utility at avoided-cost rate	Yes	Investor-owned utilities, cooperatives

² In Nevada, utilities are permitted to require customers with systems of more than 30 kW in capacity to install a second meter at the customer's expense.

³ In Nevada, it is unclear how NEG is treated for systems of more than 30 kW in capacity.

Program	System Size Limit/ Customer Classes Eligible	Eligible Technologies	Limit on Total Capacity	Treatment of Net Excess Generation (NEG)	Interconnection Standards for Net Metering	Utilities Involved
		CHP, Microturbines				
New York	400 kW for farm waste; 125 kW for farm-based wind; 25 kW for residential wind; 10 kW for solar	Photovoltaics, Biomass, Wind	Solar: 0.1% of a utility's demand in 1996; farm biogas: 0.4% of a utility's demand in 1996; wind: 0.2% of a utility's 2003 demand	Credited to customer's next bill – except NEG from wind systems over 10 kW, which is credited to customer's next bill at the utility's avoided-cost rate. All NEG purchased by utility at avoided-cost rate at end of 12-month billing cycle.	Yes	All utilities
North Carolina	20 kW residential; 100 kW non-residential	Photovoltaics, Wind, Biomass	0.2% of a utility's North Carolina retail peak load for the previous year	Credited at retail rate to customer's next monthly bill; granted to utility every June 1 and October 1	Yes	Investor-owned utilities
North Dakota	100 kW / Commercial, Industrial, Residential	Solar, Wind, Biomass, Hydro, Geothermal, Municipal Solid Waste, CHP	None	Purchased by utility at avoided-cost rate	No	Investor-owned utilities
Ohio	100 kW for microturbines; no limit for other systems / Commercial, Industrial, Residential	Solar, Wind, Biomass, Hydro, Fuel Cells, Microturbines	1% of a utility's peak demand	Credited at utility's unbundled-generation rate to customer's next monthly bill	Yes	All competitive utilities
Ohio – Bowling Green Municipal Utilities	25 kW / Commercial, Residential	Photovoltaics, Wind, Hydro, Fuel Cells	None	Negotiated with utility	(Utility guidelines)	Bowling Green Municipal Utilities
Oklahoma	100 kW or 25,000 kWh/year (whichever is less) / Commercial, Industrial, Residential	Solar, Wind, Biomass, Hydro, Geothermal, Municipal Solid Waste, CHP	None	Granted to utility monthly or credited to customer's next bill at utility's avoided-cost rate (varies by utility)	No	All utilities
Oregon	25 kW / Commercial,	Solar, Wind, Hydro, Fuel	0.5% of a utility's	Credited at retail rate to	Yes	All utilities

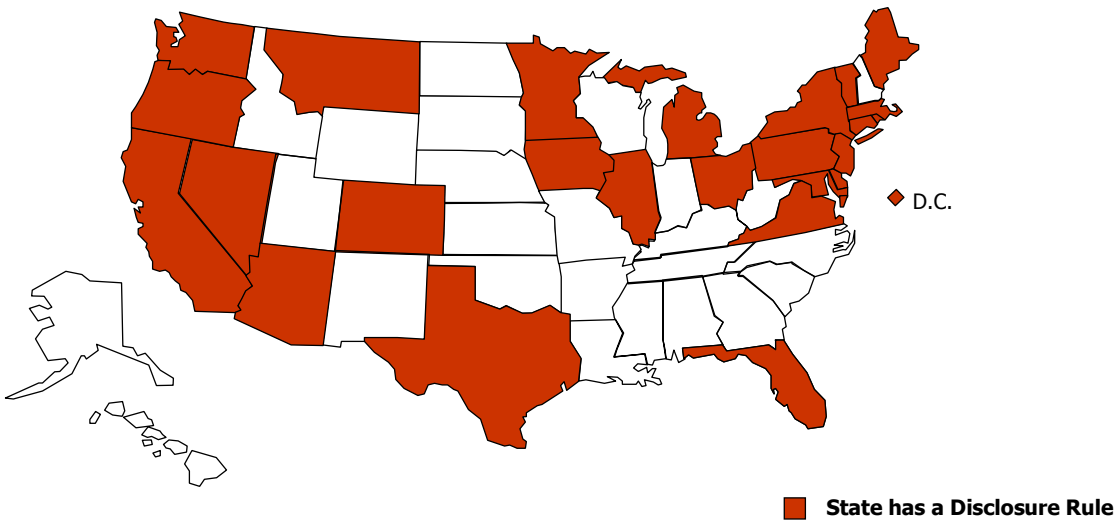
Program	System Size Limit/ Customer Classes Eligible	Eligible Technologies	Limit on Total Capacity	Treatment of Net Excess Generation (NEG)	Interconnection Standards for Net Metering	Utilities Involved
	Industrial, Residential	Cells	historic single-hour peak load	customer's next bill or purchased by utility at avoided-cost rate		
Oregon – Ashland Electric	None / Commercial, Residential	Photovoltaics, Wind	None	Purchased by utility monthly at retail rate (1,000 kWh/month maximum)	(Utility guidelines)	Ashland Electric
Pennsylvania (new rules under development)	Varies by utility / Commercial, Industrial, Residential	Solar, Wind, Biomass, Hydro	Varies by utility	Varies by utility (granted to utility in most cases)	Varies by utility	All utilities
Rhode Island	25 kW / Commercial, Industrial, Residential	Solar, Wind, Biomass, Hydro, Geothermal, Fuel Cells, Municipal Solid Waste, CHP	1 MW (Narragansett territory)	Credited at retail rate to customer's next bill; granted to utility at end of 12-month billing cycle	No	Narragansett Electric
Texas	50 kW / Commercial, Industrial, Residential	Solar, Wind, Biomass, Hydro, Geothermal, Fuel Cells, Tidal Energy, Wave Energy, Microturbines	None	Purchased by utility monthly at avoided-cost rate	Yes	Most non-municipal utilities and non-cooperatives
Texas – San Antonio City Public Service	25 kW / Commercial, Residential	Photovoltaics, Wind, Biomass, Hydro, Geothermal, Tidal Energy, Wave Energy	None	Credited at retail rate to customer's next bill at utility's seasonal avoided-cost rate	(Utility guidelines)	San Antonio City Public Service
Texas – Austin Energy	20 kW / Commercial, Residential	Solar, Wind, Biomass, Hydro, Geothermal, Municipal Solid Waste	1% of utility's load	Credited to customer's next bill	(Utility guidelines)	Austin Energy
Utah	25 kW / Commercial, Industrial, Residential	Solar, Wind, Hydro, Fuel Cells	0.1% of a utility's 2001 peak demand	Credited at retail rate to customer's next bill; granted to utility at end of 12-month billing cycle	Yes	Investor-owned utilities, cooperatives
Vermont	150 kW for farm systems; 15 kW for	Photovoltaics, Wind, Biomass, Fuel	1% of a utility's 1996 peak demand	Credited at retail rate to customer's next	Yes	All utilities

Program	System Size Limit/ Customer Classes Eligible	Eligible Technologies	Limit on Total Capacity	Treatment of Net Excess Generation (NEG)	Interconnection Standards for Net Metering	Utilities Involved
	commercial and residential / Commercial, Residential, Agricultural	Cells	or peak demand during most recent calendar year (whichever is less)	bill; granted to utility at end of 12-month billing cycle		
Virginia	500 kW for non-residential; 10 kW for residential / Commercial, Residential, Nonprofit, Schools, Government, Institutional	Solar, Wind, Hydro	0.1% of a utility's annual peak demand	Credited at retail rate to customer's next bill; granted to utility at end of 12-month billing cycle	Yes	All utilities
Washington	25 kW / Commercial, Industrial, Residential	Solar, Wind, Hydro, Fuel Cells	0.1% of a utility's 1996 peak load	Credited at retail rate to customer's next bill; granted to utility at end of 12-month billing cycle	Yes	All utilities
Washington – Grays Harbor PUD	25 kW / Commercial, Industrial, Residential	Solar, Wind, Hydro, Fuel Cells	0.1% of utility's 1996 peak load	Purchased by utility annually at 50% of retail rate	Yes	Grays Harbor PUD
Wisconsin	20 kW / Commercial, Industrial, Residential	Solar, Wind, Biomass, Hydro, Geothermal, Municipal Solid Waste, CHP	None	Purchased by utility at retail rate (renewables) or avoided-cost rate (non-renewables)	Yes	Investor-owned utilities
Wyoming	25 kW / Commercial, Industrial, Residential	Solar, Wind, Biomass, Hydro	None	Credited at retail rate to customer's next bill; purchased by utility at avoided-cost rate at end of 12-month billing cycle	Yes	All utilities

Sources: The Interstate Renewable Energy Council (IREC) and the N.C. Solar Center (NCSC). "Connecting to the Grid" Project Web site, <http://www.irecusa.org/connect>; Database of State Incentives for Renewable Energy (DSIRE), <http://www.dsireusa.org>, March 2006. Additional information, including most legislative and regulatory source citations, is available via DSIRE.

3.5 – States with Environmental Disclosure Policies

As electricity markets open to competition, retail consumers are increasingly gaining the ability to choose their electricity suppliers. With this choice comes the need for consumers to have access to information about the price, source, and environmental characteristics of their electricity. For green power marketers, in particular, it is important that consumers understand the environmental implications of their energy consumption decisions. To date, 25 states and the District of Columbia have environmental disclosure policies in place (**Figure 3.5.1**), requiring electricity suppliers to provide information on fuel sources and, in some cases, emissions associated with electricity generation. Although most of these policies have been adopted in states with retail competition, a handful of states with no plans to implement restructuring have required environmental disclosure.



Source: DSIRE database, January 2006.
<http://www.dsireusa.org/index.cfm?&CurrentPageID=10>

Figure 3.5.1: Environmental Disclosure Requirements by State

3.6 – Green Power Markets

There are three distinct markets for green power in the United States. In regulated markets, a single utility may provide a green power option to its customers through “green pricing,” which is an optional service or tariff offered to customers. These utilities include investor-owned utilities, rural electric cooperatives, and other publicly owned utilities. More than 600 utilities in 34 states offer green pricing, or are in the process of preparing programs.

In restructured (or competitive) electricity markets, retail electricity customers can choose from among multiple electricity suppliers, some of which may offer green power. Electricity markets are now open to full competition in a number of states, while others are phasing in competition.

Finally, consumers can purchase green power through “renewable energy certificates.” These certificates represent the environmental attributes of renewable energy generation and can be sold to customers in either type of market, whether or not they already have access to a green power product from their existing retail power provider.

Utility market research shows that majorities of customer respondents are likely to state that they would pay at least \$5 more per month for renewable energy. And business and other nonresidential customers, including colleges and universities, and government entities are increasingly interested in green power.

Customers

At the end of 2004, more than 500,000 electricity customers nationally were purchasing green power products through regulated utility companies, from green power marketers in a competitive market setting, or in the form of RECs (**Table 3.6.1**). In aggregate, utility green pricing programs have shown steady growth in customers over time as the number of utility programs has increased and as existing programs have grown. On the other hand, competitive markets have been less consistent. While green power sales have grown in Texas and some Northeast states, other markets have failed altogether—most notably in California and Connecticut. While REC customers represent a small fraction of the total customer base, REC sales have increased dramatically because of a number of very large purchases.

Average participation rates among utility green pricing programs have remained steady at just more than 1%, although the top performing utility green pricing programs have achieved rates ranging from 4% to 15%. Competitive markets have experienced penetration rates of from 1% to 2% in states where the market has been conducive to retail competition.

Table 3.6.1: Estimated Green Power Customers by Market Segment

	2000	2001	2002	2003	2004
Utility Green Pricing	130,000*	170,000*	230,000*	270,000	330,000
Competitive Markets	>160,000**	>110,000**	~150,000	>150,000	>180,000
REC Markets	--	--	< 10,000	< 10,000	< 10,000
Retail Total	>290,000	>280,000	~390,000	~430,000	~520,000

* Annual program participant numbers have been adjusted downward from those originally reported in Bird and Swezey (2003), because of program participation revisions made by the Los Angeles Department of Water and Power.

** Includes only customers purchasing Green-e certified green power products, as reported by the Center for Resource Solutions (2001; 2002).

Sales

Retail sales of renewable energy in voluntary purchase markets experienced strong growth in 2004, increasing more than 60% to 6.2 billion kWh annually. This includes sales of renewable energy derived from both new and preexisting renewable energy sources. REC sales nearly tripled, while sales through utility green pricing programs and competitive marketers also exhibited strong annual growth of about 40%.

Table 3.6.2: Estimated Green Power Sales by Market Segment (million kWh)

	2003	2004	Increase
Utility Green Pricing	1,280	1,840	43%
Competitive Markets	1,900	2,650	40%
REC Markets	660	1,720	162%
Retail Total	3,840	6,210	62%

*Includes sales of new and existing renewable energy.

Purchases by residential customers represent slightly more than half of total renewable energy sales in voluntary markets. In 2004, nonresidential customers accounted for 30% and 20% of total renewable energy sales in green pricing programs and competitive markets, respectively, and nearly all REC sales.

Since 2000, the amount of renewable energy capacity serving green power markets has increased more than tenfold. At the end of 2004, more than 2,200 MW of new renewable energy generation capacity was being used to supply green power markets, with another 450 MW planned.

**Table 3.6.3: Estimated Green Power Sales by Customer Segment, 2004
(million kWh)**

	Green Pricing	Competitive Markets	REC Markets	Total	Share
Residential	1,300	2,140	40	3,480	56%
Nonresidential	540	510	1,690	2,740	44%
Total	1,840	2,650	1,720	6,210	100%

Totals may not add due to rounding.

Table 3.6.4: Estimated New Renewables Capacity Supplying Green Power Markets, 2000-2004 (megawatts)

Market	2000	2001	2002	2003	2004
Utility Green Pricing	77	221	279	510	706
Competitive Markets/RECs	90	542	695	1,126	1,528
Total	167	764	974	1,636	2,233

Totals may not add due to rounding.

Source: Bird and Swezey (2005).

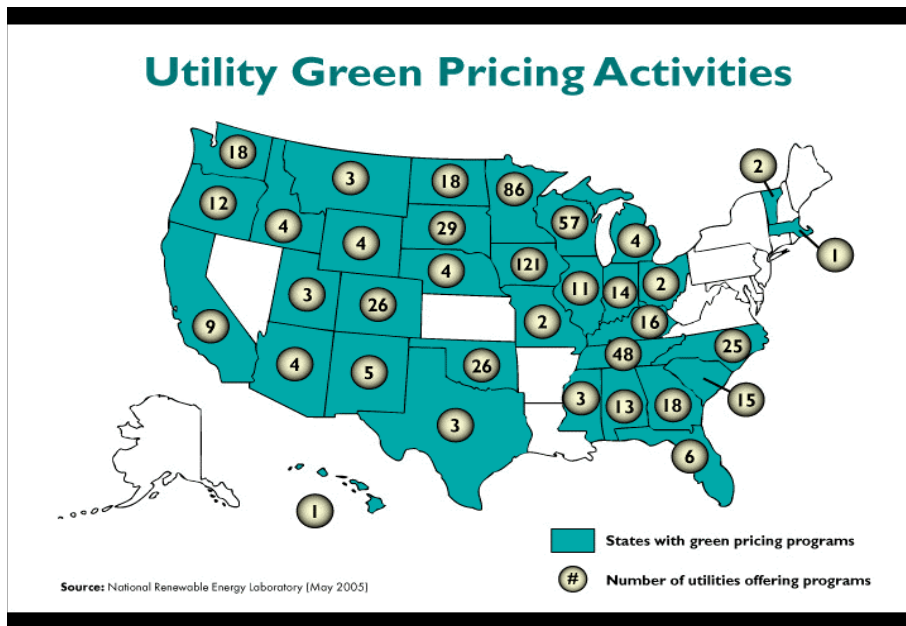
Table 3.6.5: New Renewables Capacity Supplying Green Power Markets, 2004

Source	MW in Place	%	MW Planned	%
Wind	2,045.6	91.6	364.5	80.1
Biomass	135.6	6.1	58.8	12.9
Solar	8.1	0.4	0.4	0.1
Geothermal	35.5	1.6	0.0	0.0
Small Hydro	8.5	0.4	31.3	6.9
Total	2,233.3	100.0	455.0	100.0

Source: L. Bird and B. Swezey, Estimates of New Renewable Energy Capacity Serving U.S. Green Power Markets (2004), National Renewable Energy Laboratory, September 2005. http://www.eere.energy.gov/greenpower/resources/tables/new_gp_cap.shtml

3.7 – States with Utility Green Pricing Programs

Green pricing is an optional utility service that allows customers an opportunity to support a greater level of utility company investment in renewable energy technologies. Participating customers pay a premium on their electric bill to cover the extra cost of the renewable energy. Many utilities are offering green pricing to build customer loyalty and expand business lines and expertise prior to electric market competition. To date, more than 600 investor-owned, municipal, and cooperative utilities in 34 states have either implemented or announced plans to offer a green pricing option (**Figure 3.7.1**).



Source: L. Bird and B. Swezey, National Renewable Energy Laboratory. Updated May 2005. <http://www.eere.energy.gov/greenpower/markets/pricing.shtml?page=4>

Figure 3.7.1: Number of Utilities Offering Green Pricing Programs by State

Table 3.7.1: New Renewable Energy Capacity Supplying Green Pricing Programs in 2004 (megawatts)

Source	Installed		Planned	
	Megawatts	Percentage	Megawatts	Percentage
Wind	584.0	82.8%	139.7	61.1%
Biomass	76.3	10.8%	57.5	25.1%
Solar	6.1	0.9%	0.2	0.1%
Geothermal	30.5	4.3%	0.0	0.0%
Small Hydro	8.5	1.2%	31.3	13.7%
Total	705.5	100.0%	228.7	100.0%

Source: Bird and Brown (2005)

Table 3.7.2: Estimated Cumulative Number of Customers Participating in Utility Green Pricing Programs

Customer Segment	1999	2000	2001	2002	2003	2004
Residential	na*	131,000	166,300	224,500	258,700	323,700
Nonresidential	na*	1,700	2,500	3,900	6,500	8,100
Total	66,900	132,700	168,800	228,400	265,000	331,800
% Annual Growth	na	98%	27%	35%	16%	25%
% Nonresidential	na	1.3%	1.5%	1.7%	2.4%	2.5%

*Information on residential and nonresidential participants is not available for 1999.

Source: Bird and Brown (2005)

Table 3.7.3: Customer Participation Rates in Utility Green Pricing Programs by Year

	1999	2000	2001	2002	2003	2004
Average	0.9%	1.2%	1.3%	1.2%	1.2%	1.3%
Median	0.8%	0.7%	0.7%	0.8%	0.9%	1.0%
Top 10 programs for participation*	2.1%–4.7%#	2.6%–7.3%	3.0%–7.0%	3.0%–5.8%	3.9%–1.1%	3.8%–4.5%

*The high end of the range declined from 2000 to 2002, because the utility with the highest participation rate (Moorhead Public Service) experienced an increase in its overall customer base, while the number of participants in its green pricing program remained steady. The program was fully subscribed in 2000, and the utility has not attempted to expand it.

#Data for April 2000 source: Bird and Brown (2005)

Table 3.7.4: Annual Sales of Green Energy through Utility Green Pricing Programs (million kWh)

	2000	2001	2002	2003	2004
Residential customers	---	399.7	661.3	874.1	1,295.0
Nonresidential customers	---	172.8	233.7	410.3	544.2
Total All customers	453.7	572.5	895.0	1,284.4	1,839.2
% Annual Growth		26%	56%	44%	43%
% Nonresidential Customers	---	30%	26%	32%	30%
*Sales information for customer segments not available for 2000.					

Source: Bird and Brown (2005)

Table 3.7.5: Price Premiums Charged for Utility Green Pricing Products (¢/kWh)

	1999	2000	2001	2002	2003	2004
Average	2.15	3.48	2.93	2.82	2.62	2.45
Median	2.00	2.50	2.50	2.50	2.00	2.00
Range	0.4–5.0	(0.5)–20.0	0.9–17.6	0.7–17.6	0.6–17.6	0.33–17.6
10 Programs with Lowest Premiums*	0.4–2.5**	(0.5)–2.5	1.0–1.5	0.7–1.5	0.6–1.3	0.33–1.0
Number of Programs Represented	24	50	60	80	91	101

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

**Data for April 2000.

Source: Bird and Brown (2005)

Table 3.7.6: Utility Green Pricing Programs by State, October 2005

State	Utility Name	Program Name	Type	Start Date	Premium
AK	Golden Valley Electric Association	Sustainable Natural Alternative Power (SNAP)	various local projects	2005	Contribution
AL	Alabama Power Company	Renewable Energy Rate	biomass co-firing	2003	6.0¢/kWh
AL	TVA: City of Athens Electric Department, Cullman Electric Coop, Cullman Power Board, Decatur Utilities, Florence Utilities, Hartselle Utilities, Huntsville, Joe Wheeler EMC, Muscle Shoals Electric Board, Scottsboro Electric Power Board, Sheffield Utilities, Tuscumbia Electric Department	Green Power Switch	landfill gas, PV, wind	2000	2.67¢/kWh
AZ	Arizona Public Service	APS Solar Partners Program	central PV	1997	17.6¢/kWh
AZ	Salt River Project	EarthWise Energy	central PV, wind, landfill gas, small hydro, geothermal	1998/2001	3.0¢/kWh
AZ	Tucson Electric	GreenWatts	landfill gas, PV	2000	10¢/kWh
AZ	UniSource Energy Services	GreenWatts	PV	2004	10¢/kWh
CA	Anaheim Public Utilities	Green Power for the Schools	PV	2002	Contribution
CA	Anaheim Public Utilities	Green Power for the Grid	wind, landfill gas	2002	1.5¢/kWh
CA	Burbank Water and Power	Clean Green Support	various	2001	1.0¢/kWh
CA	Los Angeles Department of Water and Power	Green Power for a Green LA	wind, landfill gas	1999	3.0¢/kWh
CA	PacifiCorp: Pacific Power	Blue Sky Block	wind	2000	1.95¢/kWh
CA	Palo Alto Utilities/3 Phases Energy Services	Palo Alto Green	wind, PV	2003	1.5¢/kWh
CA	Pasadena Water & Power	Green Power	wind	2003	2.5¢/kWh
CA	Roseville Electric	RE Green Energy	geothermal, PV	2000	1.0¢/kWh
CA	Sacramento Municipal Utility District	Greenergy	wind, landfill gas, hydro, PV	1997	1.0¢/kWh or \$6/month
CA	Silicon Valley Power / 3 Phases Energy Services	Santa Clara Green Power	wind, PV	2004	1.5¢/kWh
CO	Colorado Springs Utilities	Green Power	wind	1999	3.0¢/kWh
CO	Holy Cross Energy	Wind Power Pioneers	wind	1998	2.5¢/kWh
CO	Holy Cross Energy	Local Renewable Energy Pool	small hydro, PV	2002	3.3¢/kWh
CO	Platte River Power Authority: Estes Park, Fort Collins Utilities, Longmont Power & Communications, Loveland Water & Light	Wind Energy Premium	wind	1999	1.0¢/kWh - 2.5¢/kWh

State	Utility Name	Program Name	Type	Start Date	Premium
CO	Tri-State Generation & Transmission: Carbon Power, Chimney Rock, Gunnison County Electric, Kit Carson Electric, La Plata Electric, Mountain Parks Electric, Mountain View Electric, New Mexico, Northwest Rural, Poudre Valley Rural Electric Association, Public Power District, San Isabel Electric, San Luis Valley Rural Electric Coop, San Miguel Power, Sangre, Springer Electric, United Power, White River (18 of 44 coops offer program)	Renewable Resource Power Service	wind, hydro	1998	2.5¢/kWh
CO	Xcel Energy	Renewable Energy Trust	PV	1993	Contribution
CO	Xcel Energy	WindSource	wind	1997	0.97¢/kWh
CO	Yampa Valley Electric Association	Wind Energy Program	wind	1999	3.0¢/kWh
FL	City of Tallahassee/Sterling Planet	Green for You	biomass, PV	2002	1.6¢/kWh
FL	City of Tallahassee/Sterling Planet	Green for You	PV only	2002	11.6¢/kWh
FL	Florida Power & Light / Green Mountain Energy	Sunshine Energy	biomass, wind, PV	2004	0.975¢/kWh
FL	Gainesville Regional Utilities	GRUgreen Energy	landfill gas, wind, PV	2003	2.0¢/kWh
FL	Keys Energy Services / Sterling Planet	GO GREEN: Florida Ever Green	solar hot water, PV, biomass	2004	2.75¢/kWh
FL	Keys Energy Services / Sterling Planet	GO GREEN: USA Green	wind, biomass, PV	2004	1.60¢/kWh
FL	Tampa Electric Company (TECO)	Tampa Electric's Renewable Energy Program	PV, landfill gas, biomass co-firing	2000	5.0¢/kWh
FL	Utilities Commission City of New Smyrna Beach	Green Fund	local PV projects	1999	Contribution
GA	Georgia Electric Membership Corporation (16 of 42 coops offer program): Carroll EMC, Coastal Electric, Cobb EMC, Coweta-Fayette EMC, Flint Energies, GreyStone Power, Habersham EMC, Irwin EMC, Jackson EMC, Jefferson Energy, Lamar EMC, Ocmulgee EMC, Sawnee EMC, Snapping Shoals EMC, Tri-County EMC, Walton EMC of Monroe	Green Power EMC	landfill gas	2001	2.0¢/kWh-3.3¢/kWh
GA	Georgia Power	Green Energy	landfill gas	2005	5.5¢/ kWh
GA	TVA: Blue Ridge Mountain Electric Membership Corporation, North Georgia Electric Membership Corporation	Green Power Switch	landfill gas, PV, wind	2000	2.67¢/ kWh
HI	Hawaiian Electric	Sun Power for Schools	PV in schools	1997	Contribution
ID	Avista Utilities	Buck-A-Block	wind	2002	0.33¢/kWh
ID	Idaho Power	Green Power Program	various	2001	Contribution
ID	PacifiCorp: Utah Power	Blue Sky	wind	2003	1.95¢/kWh

State	Utility Name	Program Name	Type	Start Date	Premium
ID	Vigilante Electric Cooperative	Alternative Renewable Energy Program	wind, PV, hydro	2003	1.1¢/kWh
IL	CCS/Soyland and Community Energy, Inc (8 of 11 coops offer program): Adams Electric Co-op, Coles-Moultrie Electric, Eastern Illini Electric, McDonough Power, Menard, Rural Electric Convenience Co-op, Shelby Electric, Spoon River Electric Co-op	EcoEnergy	wind	2005	3.0¢/kWh
IL	City of Naperville / Community Energy	Renewable Energy Option	wind, small hydro, PV	2005	2.5¢/kWh
IL	City of St. Charles/ComEd and Community Energy	TBD	wind, landfill gas	2003	Contribution
IL	Dairyland Power Cooperative: Jo-Carroll Energy/Elizabeth	Evergreen Renewable Energy Program	wind	1997	1.5¢/kWh
IN	Hoosier Energy (5 of 17 coops offer program): Southeastern Indiana REMC, South Central Indiana REMC, Utilities District of Western Indiana REMC, Decatur County REMC, Daviess-Martin County REMC	EnviroWatts	landfill gas	2001	2.0¢/kWh-4.0¢/kWh
IN	Indianapolis Power & Light	Elect Plan Green Power Program	geothermal	1998	0.9¢/kWh
IN	PSI Energy/Cinergy	Green Power Rider	wind, PV, landfill gas, digester gas	2001	Contribution
IN	Wabash Valley Power Association (7 of 27 coops offer program): Boone REMC, Hendricks Power Cooperative, Kankakee Valley REMC, Miami-Cass REMC, Tipmont REMC, White County REMC, Northeastern REMC	EnviroWatts	landfill gas	2000	0.9¢/kWh-1.0¢/kWh
IA	Alliant Energy	Second Nature	landfill gas, wind	2001	2.0¢/kWh
IA	Basin Electric Power Cooperative: Lyon Rural, Harrison County, Nishnabotna Valley Cooperative, Northwest Rural Electric Cooperative, Western Iowa	Prairie Winds	wind	2000	1.0¢/kWh-2.5¢/kWh
IA	Cedar Falls Utilities	Harvest the Wind	wind	2000	2.5¢/kWh
IA	Corn Belt Power Cooperatives (5 of 11 co-ops): Butler County REC, Franklin REC, Grundy County REC, Humboldt County REC, Sac County REC	Energy Wise Renewables	wind	2003	1.5¢/kWh
IA	Dairyland Power Cooperative: Allamakee-Clayton/Postville, Hawkeye Tri-County/Cresco, Heartland Power/Thompson & St. Ansgar	Evergreen Renewable Energy Program	wind	1997	3.0¢/kWh
IA	Farmers Electric Cooperative	Green Power Project	biodiesel, wind	2004	Contribution

State	Utility Name	Program Name	Type	Start Date	Premium
IA	Iowa Association of Municipal Utilities (80 of 137 participating) Afton, Algona, Alta Vista, Aplington, Auburn, Bancroft, Bellevue, Bloomfield, Breda, Brooklyn, Buffalo, Burt, Callender, Carlisle, Cascade, Coggon, Coon Rapids, Corning, Corwith, Danville, Dayton, Durant, Dysart, Earlville, Eldridge, Ellsworth, Estherville, Fairbank, Farnhamville, Fontanelle, Forest City, Gowrie, Grafton, Grand Junction, Greenfield, Grundy Center, Guttenberg, Hopkinton, Hudson, Independence, Keosauqua, La Porte City, Lake Mills, Lake View, Laurens, Lenox, Livermore, Maquoketa, Marathon, McGregor, Milford, Montezuma, Mount Pleasant, Neola, New Hampton, Ogden, Orient, Osage, Panora, Pella, Pocahontas, Preston, Readlyn, Rockford, Sabula, Sergeant Bluff, Sibley, Spencer, Stanhope, State Center, Stratford, Strawberry Point, Stuart, Tipton, Villisca, Vinton, Webster City, West Bend, West Liberty, West Point, Westfield, Whittemore, Wilton, Winterset	Green City Energy	wind, biomass, PV	2003	Varies by utility
IA	MidAmerican Energy	Renewable Advantage	wind	2004	Contribution
IA	Missouri River Energy Services (MRES): Alton, Atlantic, Denison, Fontanelle, Hartley, Hawarden, Kimballton, Lake Park, Manilla, Orange City, Paullina, Primghar, Remsen, Rock Rapids, Sanborn, Shelby, Sioux Center, Woodbine	RiverWinds	wind	2003	1.0¢/kWh-2.5¢/kWh
IA	Muscatine Power and Water	Solar Muscatine	PV	2004	Contribution
IA	Waverly Light & Power	Green Power Choice	wind	2003	Contribution
IA	Waverly Light & Power	Iowa Energy Tags	wind	2001	2.0¢/kWh
KY	East Kentucky Power Cooperative: Blue Grass Energy, Clark, Cumberland, Fleming, Grayson, Inter-county Energy, Jackson, Licking, Mason, Nolin, Owen Electric, Salt River, Shelby, South Kentucky	EnviroWatts	landfill gas	2002	2.75¢/kWh
KY	TVA: Bowling Green Municipal Utilities, Franklin Electric Plant Board	Green Power Switch	landfill gas, PV, wind	2000	2.67¢/kWh
MA	Concord Municipal Light Plant (CMLP)	Green Power	hydro	2004	3.0¢/kWh
MI	Consumers Energy	Green Generation	wind, landfill gas	2005	1.67¢/kWh
MI	Lansing Board of Water and Light	GreenWise Electric Power	landfill gas, small hydro	2001	3.0¢/kWh
MI	Traverse City Light and Power	Green Rate	wind	1996	1.5¢/kWh
MI	Upper Peninsula Power Company	NatureWise	wind, landfill gas and animal waste methane	2004	4.0¢/kWh

State	Utility Name	Program Name	Type	Start Date	Premium
MI	We Energies	Energy for Tomorrow	wind, landfill gas, hydro	2000	2.0¢/kWh
MN	Alliant Energy	Second Nature	landfill gas, wind	2002	2.0¢/kWh
MN	Basin Electric Power Cooperative: Minnesota Valley Electric Coop, Sioux Valley Southwestern	Prairie Winds	wind	2002	1.0¢/kWh-2.5¢/kWh
MN	Central Minnesota Municipal Power Agency	Green Energy Program	wind, landfill gas	n/a	1.5¢/kWh-2.5¢/kWh
MN	Dairyland Power Cooperative: Freeborn-Mower Cooperative / Albert Lea, People's / Rochester, Tri-County / Rushford	Evergreen Renewable Energy Program	wind	1997	1.5¢/kWh
MN	Great River Energy (all 28 coops offer program): Agralite, Arrowhead, BENCO Electric, Brown County Rural Electric, Connexus Energy, Co-op Light & Power, Crow Wing Power, Dakota Electric Association, East Central Electric Association, Federated Rural Electric, Goodhue County, Itasca Mantrap Cooperative, Kandiyohi Power Cooperative, Lake Country Power, Lake Region Electric Cooperative, McLeod Cooperative Power, Meeker Cooperative Light & Power, Mille Lacs Electric Cooperative, Minnesota Valley, Nobles Cooperative Electric, North Itasca, Redwood Electric Cooperative, Runestone Electric, South Central Electric Association, Stearns Electric, Steele-Waseca, Todd-Wadena, Wright-Hennepin Electric	Wellspring Renewable Wind Energy Program	wind	1998	1.45¢/kWh-2.0¢/kWh
MN	Minnesota Power	WindSense	wind	2002	2.5¢/kWh
MN	Minnkota Power Cooperative: Beltrami, Clearwater Polk, North Star, PKM, Red Lake, Red River, Roseau, Wild Rice, Thief River Falls	Infinity Wind Energy	wind	1999	1.5¢/kWh
MN	Missouri River Energy Services (39 of 55 munis offer program): Adrian, Alexandria, Barnesville, Benson, Breckenridge, Detroit Lakes, Elbow Lake, Henning, Jackson, Lakefield, Lake Park, Luverne, Madison, Moorhead, Ortonville, St. James, Sauk Centre, Staples, Wadena, Westbrook, Worthington	RiverWinds	wind	2002	1.0¢/kWh-2.5¢/kWh
MN	Moorhead Public Service	Capture the Wind	wind	1998	1.5¢/kWh
MN	Otter Tail Power Company	TailWinds	wind	2002	2.6¢/kWh

State	Utility Name	Program Name	Type	Start Date	Premium
MN	Southern Minnesota Municipal Power Agency (all 18 offer program): Fairmont Public Utilities, Wells Public Utilities, Austin Utilities, Preston Public Utilities, Spring Valley Utilities, Blooming Prairie Public Utilities, Rochester Public Utilities, Owatonna Public Utilities, Waseca Utilities, St. Peter Municipal Utilities, Lake City Utilities, New Prague Utilities Commission, Redwood Falls Public Utilities, Litchfield Public Utilities, Princeton Public Utilities, North Branch Water and Light, Mora Municipal Utilities, Grand Marais Public Utilities	SMMPA Wind Power	wind	2000	1.0¢/kWh
MN	Xcel Energy	WindSource	wind	2003	2.0¢/kWh
MS	TVA: City of Oxford, North East Mississippi Electric Power Association, Starkville Electric System	Green Power Switch	landfill gas, PV, wind	2000	2.67¢/kWh
MO	Boone Electric Cooperative	Renewable Choice	wind	2003	2.0¢/kWh
MO	City Utilities of Springfield	WindCurrent	wind	2000	5.0¢/kWh
MT	Basin Electric Power Cooperative: Lower Yellowstone	Prairie Winds	wind	2000	1.0¢/kWh-2.5¢/kWh
MT	Northwestern Energy	E+ Green	wind, PV	2003	2.0¢/kWh
MT	Park Electric Cooperative	Green Power Program	wind, hydro	2002	1.2¢/kWh
MT	Southern Montana Electric Generation and Transmission Cooperative (5 co-ops): Fergus Electric, Yellowstone Valley, Bear Tooth Electric, Mid Yellowstone, and Tongue River	Environmentally Preferred Power	wind, hydro	2002	1.05¢/kWh
MT	Vigilante Electric Cooperative	Alternative Renewable Energy Program	wind, hydro, PV	2003	1.1¢/kWh
NE	Lincoln Electric System	LES Renewable Energy Program	wind	1998	4.3¢/kWh
NE	Omaha Public Power District	Green Power Program	landfill gas, wind	2002	3.0¢/kWh
NE	Tri-State: Chimney Rock Public Power District, Northwest Rural Public Power District	Renewable Resource Power Service	wind, landfill gas	2001	2.5¢/kWh
NM	El Paso Electric	Renewable Energy Tariff	wind	2003	3.19¢/kWh
NM	Los Alamos Department of Public Utilities	Green Power	wind	2005	1.8¢/kWh
NM	Public Service of New Mexico	PNM Sky Blue	wind	2003	1.8¢/kWh
NM	Tri-State: Kit Carson Electric Cooperative	Renewable Resource Power Service	wind, landfill gas	2001	2.5¢/kWh
NM	Xcel Energy	WindSource	wind	1999	3.0¢/kWh
NC	Dominion North Carolina Power	NC GreenPower	biomass, wind, solar	2003	4.0¢/kWh
NC	Duke Power	NC GreenPower	biomass, wind, solar	2003	4.0¢/kWh

State	Utility Name	Program Name	Type	Start Date	Premium
NC	ElectriCities: City of High Point, City of Laurinburg, City of Newton, City of Shelby, City of Statesville, town of Apex, Town of Granite Falls	NC GreenPower	biomass, wind, solar	2003	4.0¢/kWh
NC	NC Electric Cooperatives (15 of 27 cooperatives offer the program): Albemarle EMC, Blue Ridge Electric Membership Corp., Brunswick Electric Membership Corp., Carteret Craven Electric Coop., Edgecombe-Martin County Electric Membership Corp., EnergyUnited, Four County Electric Membership Corp., Haywood Electric Membership Corp., Jones-Onslow Electric Membership Corp., Pee Dee Electric Membership Corp., Piedmont Electric Membership Corp., Randolph Electric Membership Corp., Roanoke Electric Membership Corp., Tri-County Electric Membership Corp., Wake Electric Membership Corp.	NC GreenPower	biomass, wind, PV	2003	4.0¢/kWh
NC	Progress Energy / CP&L	NC GreenPower	biomass, wind, solar	2003	4.0¢/kWh
NC	TVA: Mountain Electric Cooperative	Green Power Switch	landfill gas, PV, wind	2000	2.67¢/kWh
ND	Basin Electric Power Cooperative (49 coops offer program in 5 states): Oliver Mercer Electric Coop, Morgan-sou Electric Coop, KEM Electric Coop, North Central Electric Coop, Verendrye, Capital, Northern Plains, Dakota Valley, Burke Divide, Montrail Williams, McKenzie Electric Coop, West Plains, Slope Electric Coop	PrairieWinds	wind	2000	1.0¢/kWh-2.5¢/kWh
ND	Minnkota Power Cooperative: Cass County Electric, Cavalier Rural Electric, Nodak Electric, Northern Municipal Power Agency (12 municipals)	Infinity Wind Energy	wind	1999	1.5¢/kWh
ND	Missouri River Energy Services: City of Lakota	RiverWinds	wind	2002	1.0¢/kWh-2.5¢/kWh
OH	American Municipal Power-Ohio / Green Mountain Energy: City of Bowling Green, Cuyahoga Falls, Wyandotte	Nature's Energy	small hydro, landfill gas, wind	2003	1.3¢/kWh-1.5¢/kWh
OK	OG&E Electric Services	OG&E Wind Power	wind	2003	2.0¢/kWh
OK	Oklahoma Municipal Power Authority: Tonkawa, Altus, Frederick, Okeene, Prague Municipal Utilities and Edmond Electric	Pure & Simple	wind	2004	1.8¢/kWh

State	Utility Name	Program Name	Type	Start Date	Premium
OK	Western Farmers Electric Cooperative (19 of 19): Alfalfa Electric Cooperative, Caddo Electric Cooperative, Canadian Valley Electric Cooperative, Choctaw Electric Cooperative, Cimmaron Electric Cooperative, Cotton Electric Cooperative, East Central Oklahoma Electric Cooperative, Harmon Electric Cooperative, Kay Electric Cooperative, Kiamichi Electric Cooperative, Kiwash Electric Cooperative, Northfork Electric Cooperative, Northwestern Electric Cooperative, Oklahoma Electric Cooperative, People's Electric Cooperative, Red River Valley Rural Electric Cooperative, Rural Electric Cooperative, Southeastern Electric Cooperative, Southwest Rural Electric Cooperative	WindWorks	wind	2004	0.5¢/kWh
OR	City of Ashland/Bonneville Environmental Foundation	Renewable Pioneers	PV, wind	2003	2.0¢/kWh
OR	Columbia River PUD	Choice Energy	wind	2005	2.0¢/kWh
OR	Emerald People's Utility District/Green Mountain Energy	Choose Renewable Electricity	wind, geothermal	2003	1.2¢/kWh
OR	Eugene Water & Electric Board	EWEB Wind Power	wind	1999	0.71¢/kWh
OR	Midstate Electric Cooperative	Environmentally-Preferred Power	wind, small hydro	1999	2.5¢/kWh
OR	Oregon Trail Electric Cooperative	Green Power	wind	2002	1.5¢/kWh
OR	PacifiCorp: Pacific Power	Blue Sky QS (Commercial Only)	wind	2004	Sliding scale depending on size
OR	PacifiCorp: Pacific Power	Blue Sky Block	wind	2000	1.95¢/kWh
OR	PacifiCorp: Pacific Power / 3 Phases Energy Services	Blue Sky Usage	wind, biomass, PV	2002	0.78¢/kWh
OR	PacifiCorp: Pacific Power / 3 Phases Energy Services	Blue Sky Habitat	wind, biomass, PV	2002	0.78¢/kWh + \$2.50/mo. donation
OR	Pacific Northwest Generating Cooperative: Central Electric Cooperative, Clearwater Power, Consumers Power, Douglas Electric Cooperative, Umatilla Electric Cooperative (5 of 16 coops offer program)	Green Power	landfill gas	1998	1.8¢/kWh-4.0¢/kWh
OR	Portland General Electric / Green Mountain Energy	Green Source	existing geothermal, wind	2002	0.8¢/kWh
OR	Portland General Electric / Green Mountain Energy	Healthy Habitat	existing geothermal, wind	2002	0.8¢/kWh + \$2.50/mo. donation
OR	Portland General Electric Company	Clean Wind for Medium to Large Commercial & Industrial Accounts	wind	2003	1.35¢/kWh-1.7¢/kWh

State	Utility Name	Program Name	Type	Start Date	Premium
OR	Portland General Electric Company	Clean Wind Power	wind	2002	1.75¢/kWh
SC	Santee Cooper, Aiken Electric Cooperative, Berkeley Electric Cooperative, Edisto Electric Cooperative, Fairfield Electric Cooperative, Horry Electric Cooperative, Laurens Electric Cooperative, Lynches River Electric Cooperative, Marlboro Electric Cooperative, Mid-Carolina Electric Cooperative, Palmetto Electric Cooperative, Pee Dee Electric Cooperative, Santee Electric Cooperative, Tri-County Electric Cooperative, York Electric Cooperative	Green Power Program	landfill gas	2001	3.0¢/kWh
SD	Basin Electric Power Cooperative: Bon Homme-Yankton Electric Assn., Central Electric Cooperative Association, Charles Mix Electric Association, City of Elk Point, Clay-Union Electric Corporation, Codington-Clark Electric Cooperative, Dakota Energy Cooperative, Douglas Electric Cooperative, FEM Electric Association, H-D Electric Cooperative, Kingsbury Electric Cooperative, Lyon-Lincoln Electric Cooperative, McCook Electric Cooperative, Northern Electric Cooperative, Oahe Electric Cooperative, Renville-Sibley Coop. Power Assn., Sioux Valley Southwestern Electric Coop, Southeastern Electric Coop, Union County Electric Cooperative, Whetstone Valley Electric Cooperative, Black Hills Electric Coop, LaCreek Electric Coop, West River Power Association, Butte Electric Coop, Cherry Todd Electric Coop, Moreau Grand, Grand Electric Cooperative, Rosebud	Prairie Winds	wind	2000	1.0¢/kWh-2.5¢/kWh
SD	Missouri River Energy Services: City of Vermillion	RiverWinds	wind	2002	1.0¢/kWh-2.5¢/kWh
TN	TVA: Alcoa Electric Department, Appalachian Electric Cooperative, Athens Utility Board, Bristol Tennessee Electric System, Caney Fork Electric Cooperative, City of Maryville Electric Department, Clarksville Department of Electricity, Cleveland Utilities, Clinton Utilities Board, Cookeville Electric Department, Cumberland Electric Membership Corporation, Dickson Electric Department, Duck River Electric Membership Corporation,	Green Power Switch	landfill gas, PV, wind	2000	2.67¢/kWh

State	Utility Name	Program Name	Type	Start Date	Premium
	Elizabethton Electric System, EPB (Chattanooga), Erwin Utilities, Fayetteville Public Utilities, Gibson Electric Membership Corporation, Greeneville Light and Power System, Harriman Utility Board, Johnson City Power Board, Jackson Energy Authority, Knoxville Utilities Board, Lafollette Utilities Board, Lawrenceburg Power System, Lenoir City Utilities Board, Loudon Utilities, McMinnville Electric System, Memphis Light, Gas & Water, Meriwhether Lewis Electric Cooperative, Middle Tennessee Electric Membership Corporation, Morristown Power System, Mountain Electric Cooperative, Murfreesboro Electric Department, Nashville Electric Service, Newport Utilities, Oak Ridge Electric Department, Paris Board of Public Utilities, Plateau Electric Cooperative, Powell Valley Electric Cooperative, Pulaski Electric System, Sequachee Valley Electric Cooperative, Sevier County Electric System, Springfield Department of Electricity, Sweetwater Utilities Board, Tullahoma Utilities Board, Upper Cumberland Electric Membership Corporation, Volunteer Energy				
TX	Austin Energy (City of Austin)	GreenChoice	wind, landfill gas, hydro	2000/1997	0.5¢/kWh
TX	City Public Service of San Antonio	Windtricity	wind	2000	3.0¢/kWh
TX	El Paso Electric Company	Renewable Energy Tariff	wind	2001	1.92¢/kWh
UT	City of St. George	Clean Green Power	wind, small hydro	2005	2.95¢/kWh
UT	Deseret Power	GreenWay	various	2004	1.95¢/kWh
UT	Pacificorp: Utah Power	Blue Sky	wind	2000	1.95¢/kWh
VT	Central Vermont Public Service	CVPS Cow Power	biogas	2004	4.0¢/kWh
VT	Green Mountain Power	CoolHome / CoolBusiness	wind, biomass	2002	Contribution
WA	Avista Utilities	Buck-A-Block	wind	2002	0.33¢/kWh
WA	Benton County Public Utility District	Green Power Program	landfill gas, wind	1999	Contribution
WA	Chelan County PUD	Sustainable Natural Alternative Power (SNAP)	PV, wind, micro hydro	2001	Contribution
WA	Clallam County PUD	Clallam County PUD Green Power Program	landfill gas	2001	0.7¢/kWh
WA	Clark Public Utilities	Green Lights	PV, wind	2002	1.5¢/kWh
WA	Cowlitz PUD	Renewable Resource Energy	wind, PV	2002	2.0¢/kWh

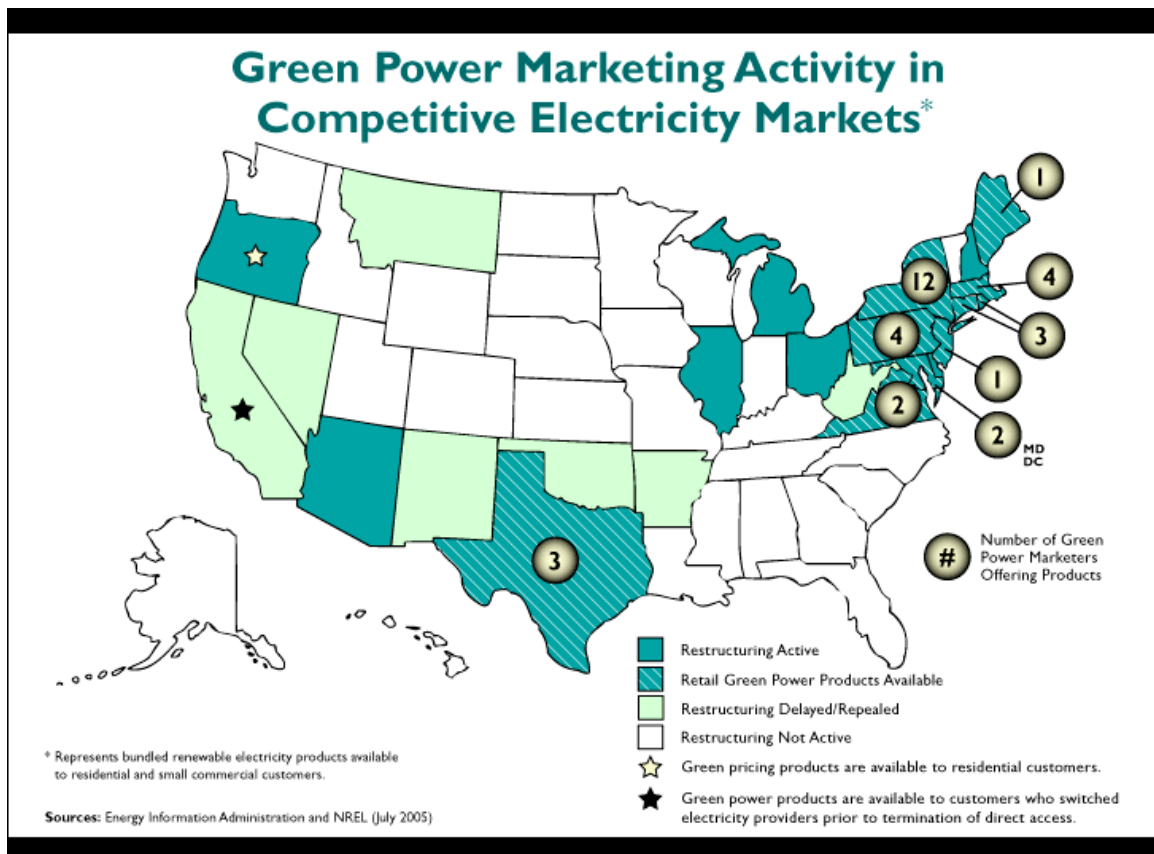
State	Utility Name	Program Name	Type	Start Date	Premium
WA	Grant County PUD	Alternative Energy Resources Program	wind	2002	2.0¢/kWh
WA	Grays Harbor PUD	Green Power	wind	2002	3.0¢/kWh
WA	Lewis County PUD	Green Power Energy Rate	wind	2003	2.0¢/kWh
WA	Mason County PUD No. 3	Mason Evergreen Power	wind	2003	2.0¢/kWh
WA	Orcas Power & Light	Go Green	wind, hydro	1999	3.5¢/kWh
WA	Pacific County PUD	Green Power	landfill gas	2002	1.05¢/kWh
WA	Pacificorp: Pacific Power	Blue Sky	wind	2000	1.95¢/kWh
WA	Peninsula Light	Green by Choice	wind, hydro	2002	2.8¢/kWh
WA	Puget Sound Energy	Green Power Plan	wind, PV, biogas	2002	2.0¢/kWh
WA	Seattle City Light	Green UP (C&I only)	wind	2005	1.5¢/kWh
WA	Seattle City Light	Seattle Green Power	PV, biogas	2002	Contribution
WA	Snohomish County Public Utility District	Planet Power	wind	2002	2.0¢/kWh
WA	Tacoma Power	EverGreen Options	small hydro, wind	2000	1.5¢/kWh
WI	Alliant Energy	Second Nature	wind, landfill gas	2000	2.0¢/kWh
WI	Dairyland Power Cooperative: Barron Electric, Bayfield/ Iron River, Chippewa / Cornell Valley, Clark / Greenwood, Dunn / Menomonie, Eau Claire / Fall Creek, Jackson / Black River Falls, Jump River / Ladysmith, Oakdale, Pierce-Pepin / Ellsworth, Polk-Burnett / Centuria, Price / Phillips, Richland, Riverland / Arcadia, St. Croix / Baldwin, Scenic Rivers / Lancaster, Taylor / Medford, Vernon / Westby	Evergreen Renewable Energy Program	wind	1998	1.5¢/kWh
WI	Great River Energy: Head of the Lakes	Wellspring Renewable Wind Energy Program	wind	1997	1.45¢/kWh-2.0¢/kWh
WI	Madison Gas & Electric	Wind Power Program	wind	1999	3.3¢/kWh
WI	We Energies	Energy for Tomorrow	landfill gas, hydro, wind	1996	2.04¢/kWh
WI	Wisconsin Public Power Inc. (34 of 37 munis offer program): Algoma, Cedarburg, Florence, Kaukauna, Muscoda, Stoughton, Reedsburg, Oconomowoc, Waterloo, Whitehall, Columbus, Hartford, Lake Mills, New Holstein, Richland Center, Boscobel, Cuba City, Hustisford, Sturgeon Bay, Waunakee, Lodi, New London, Plymouth, River Falls, Sun Prairie, Waupun, Eagle River, Jefferson, Menasha, New Richmond, Prairie du Sac, Slinger, Two Rivers, Westby	Renewable Energy Program	small hydro, wind, biogas	2001	2.0¢/kWh
WI	Wisconsin Public Service	NatureWise	wind, landfill gas, biogas	2002	1.86¢/kWh
WI	Wisconsin Public Service	Solar Wise for Schools	PV in schools	1996	Contribution

State	Utility Name	Program Name	Type	Start Date	Premium
WY	Lower Valley Energy	Green Power	wind	2003	1.17¢/kWh
WY	Pacificorp: Pacific Power	Blue Sky	wind	2000	1.95¢/kWh
WY	Tri-State: Carbon Power & Light	Renewable Resource Power Service	wind, landfill gas	2001	2.5¢/kWh
WY	Yampa Valley Electric Association	Wind Energy Program	wind	1999	3.0¢/kWh

3.8 – Competitive Green Power Offerings and Renewable Energy Certificates

Green power marketing refers to selling green power in the competitive marketplace, in which multiple suppliers and service offerings exist. Electricity markets are now open to full competition in a number of states, while others are phasing-in competition, allowing some customers to choose their electricity supplier. As of mid-2004, competitive marketers offer green power to retail or wholesale customers in Maine, Maryland, Massachusetts, Pennsylvania, New Jersey, New York, Rhode Island, Texas, Virginia, and the District of Columbia (**Figure 3.8.1**).

Renewable energy certificates (RECs) – also known as green tags, renewable energy credits, or tradeable renewable certificates – present the environmental attributes of power generated from renewable electric plants. A number of organizations offer green energy certificates separate from electricity service (i.e. customers do not need to switch from their current electricity supplier to purchase these certificates). See our list below of organizations that offer green certificate products.



Source: L. Bird and B. Swezey, National Renewable Energy Laboratory. Updated July 2005.
<http://www.eere.energy.gov/greenpower/markets/marketing.shtml?page=4>

Figure 3.8.1: Green Power Marketing Activity in Competitive Electricity Markets

Based on data received from green power marketers, an estimated 200,000 retail customers were purchasing green power from competitive suppliers – or in the form of RECs – at the end of 2004. Most of these customers are purchasing green power from competitive suppliers in states with retail competition, primarily in the Northeast and Texas, including about 30,000 participants in utility/marketer programs. Of the total, fewer than 10,000 retail customers purchase REC products (**Table 3.8.1**), with most customers concentrated in the Mid-Atlantic and Northeast states where REC marketers tend to be most active. In competitive markets, the vast majority of customers purchasing green power are residential customers, while the fraction of nonresidential customers purchasing RECs is higher – on the order of one-fifth.

Table 3.8.1: Estimated Number of Customers Purchasing RECs or Green Power from Competitive Marketers, 2002-2004

	2002	2003	2004
Competitive Markets	~150,000	>150,000	>180,000
RECs	<10,000	<10,000	<10,000
Total	<160,000	~160,000	~190,000

Table 3.8.2: Retail Sales of Renewable Energy in Competitive Markets and RECs (million kWh)

	2003	2004
Competitive Markets		
Residential	na	2,140
Nonresidential	na	510
Subtotal	1,900	2,650
RECs		
Residential	na	40
Nonresidential	na	1,690
Subtotal	660	1,720
Total Sales	2,560	4,370

na = not available

An estimated 1,530 MW of new renewables capacity is used to supply competitive green power markets, or is being sold as RECs in both retail and wholesale markets; wind energy is the predominant resource type. More than 225 MW of additional renewables capacity is planned, again dominated by wind.

An estimated 4.4 billion kWh of renewable energy was sold to retail customers by competitive and REC marketers. About 2.7 billion kWh of this total was sold to retail customers bundled with electricity in competitive electricity markets – a 40% increase from 2003. This figure includes renewable energy from both existing and new sources, as well as that sold to customers in products that contain only a small percentage of renewable energy. It also includes sales of renewable energy through default utility/supplier programs or utility/marketer partnership in states with retail competition,

which totaled 136 million kWh. Retail sales of RECs, which are sold separate from electricity and largely derived from new renewable energy sources, grew nearly threefold, reaching 1.7 billion kWh in 2004.

Table 3.8.3: New Renewables Capacity Supplying Competitive Markets and Renewable Energy Certificates, 2004

Source	MW in Place	%	MW Planned	%
Wind	1,461.6	95.7	224.8	99.3
Biomass	59.3	3.9	1.3	0.6
Solar	2.0	0.1	0.2	0.1
Geothermal	5.0	0.3	0.0	0.0
Small Hydro	0.0	0.0	0.0	0.0
Total	1,527.9	100.0	226.3	100.0

Source: L.Bird and B. Swezey, Estimates of New Renewable Energy Capacity Serving U.S. Green Power Markets (2004), National Renewable Energy Laboratory, September 2005. http://www.eere.energy.gov/greenpower/resources/tables/new_gp_cap.shtml

Table 3.8.4: Estimated Wholesale RECs Supplying Voluntary Markets, 2003

	Retail Sales Millions of MWh	Estimated RECs Sales Millions of MWh
Utility Green Pricing	1.3	0.4
Competitive Markets	1.9	1.9
Unbundled RECs	0.7	0.7
Total Green Power Market	3.9	3.0

Source: L. Bird, NREL, 2004

Table 3.8.5: Voluntary Market REC Retirements in Texas and NEPOOL

Year	Texas Voluntary REC Retirements (MWh)	NEPOOL Voluntary REC Retirements (MWh)*
2001	N/a	0
2002	241,000	112,973
2003	797,000	56,905

Sources: ERCOT 2004; NEPOOL GIS

Table 3.8.6: Voluntary Market Wholesale REC Prices for New Sources by Type and Region (\$/MWh)

	Wind	Solar	Biomass	Small Hydro
CA	1.75-2.00		1.50	
WECC	1.25-7.50	30.00-150.00	1.50-3.50	
Central	2.00-5.50		1.50	
PJM	15.00-17.00	80.00-200.00	4.00-5.00	
New York	15.00-16.00		6.00	
NEPOOL	35.00		45.00	5.00
SPP	2.50-5.00			
Southeast			3.50	

Sources: Evolution Markets (data for July 2003 through October 2004) and GT Energy.

Table 3.8.7: Voluntary Market Wholesale REC Prices for Existing Sources by Type and Region (\$/MWh)

	Biomass	Geothermal	Hydro	Small Hydro	LIHI Hydro
WECC	0.25-2.50	1.00-3.50			
Central					
PJM					
New York	2.00-5.00		2.00-3.00	1.00-3.50	
NEPOOL				2.00-4.00	6.00
Southeast					

Source: Evolution Markets. Data for July 2003 through October 2004.

Table 3.8.8: Retail Green Power Product Offerings in Competitive Electricity Markets, October 2005

State	Company	Product Name	Residential Price Premium ¹	Fee	Resource Mix ²	Certification
CT	Community Energy (CT Clean Energy Options Program)	CT Clean Energy Options 50% or 100% of usage	1.1¢/kWh	—	50% new wind, 50% landfill gas	—
CT	Levco	100% Renewable Electricity Program	0.0¢/kWh	—	98% waste-to-energy and hydro (Class II), 2% new solar, wind, fuel cells, and landfill gas	—
CT	Sterling Planet (CT Clean Energy Options Program)	Sterling Select 50% or 100% of usage	1.15¢/kWh	—	33% new wind, 33% existing small low impact hydro, 34% new landfill gas	—
DC	PEPCO Energy Services (3)	Green Electricity 10%, 51% or 100% of usage	1.35¢/kWh (for 100% usage)	—	landfill gas	—
DC	PEPCO Energy Services (3)	NewWind Energy 51% or 100% of usage	2.05¢/kWh (for 100% usage)	—	new wind	—
DC	Washington Gas Energy Services / Community Energy	New Wind Energy (5%, 10%, 25%, 50%, or 100% of usage)	2.5¢/kWh	—	new wind	—
ME	Maine Renewable Energy/Maine Interfaith Power & Light (4)	Maine Clean Power	2.37¢/kWh	—	100% low impact hydro	—
ME	Maine Renewable Energy/Maine Interfaith Power & Light (4)	Maine Clean Power Plus	2.87¢/kWh	—	80% low impact hydro, 20% wind	—
MD	PEPCO Energy Services (5)	Green Electricity 10%, 51% or 100% of usage	2.75¢/kWh (for 100% usage)	—	landfill gas	—
MD	PEPCO Energy Services (5)	NewWind Energy 51% or 100% of usage	3.35¢/kWh (for 100% usage)	—	new wind	—
MD	PEPCO Energy Services (5)	Non-residential product	NA	—	50% to 100% eligible renewables	Green-e
MD	Washington Gas Energy Services / Community Energy	New Wind Energy	2.5¢/kWh	—	new wind (5%, 10%, 25%, 50%, or 100% of usage) or 100 kWh blocks	—
MA	Cape Light Compact (6)	Cape Light Compact Green 50% or 100%	1.768¢/kWh (for 100% usage)	—	75% small hydro, 24% new wind or landfill gas, 1% new solar	—
MA	Massachusetts Electric/Nantucket Electric/Community Energy	New Wind Energy 50% or 100% of usage	2.4¢/kWh	—	50% small hydro, 50% new wind	Green-e

State	Company	Product Name	Residential Price Premium1	Fee	Resource Mix2	Certification
MA	Massachusetts Electric/Nantucket Electric/Mass Energy Consumers Alliance	New England GreenStart 50% or 100% of usage	2.4¢/kWh (for 100% usage)	—	75% small hydro, 19% biomass, 5% wind, 1% solar (≥25% of total is new)	—
MA	Massachusetts Electric/Nantucket Electric/Sterling Planet	Sterling Premium 50% or 100% of usage	1.35¢/kWh	—	50% small hydro, 30% bioenergy, 15% wind, 5% new solar	Environmental Resources Trust
NJ	Green Mountain Energy Company (7)	Enviro Blend	1.0¢/kWh	\$3.95/mo.	5% new wind, 0.4% solar, 44.6% captured methane, 50% large hydro	—
NJ	PSE&G/JCP&L/Community Energy	Clean Power Choice Program	1.3¢/kWh	—	50% wind, 49% low impact hydro, 1% solar	—
NJ	PSE&G/JCP&L/Green Mountain Energy	Clean Power Choice Program	0.9¢/kWh	—	50% wind, 50% low impact hydro	—
NJ	PSE&G/JCP&L/Jersey-Atlantic Wind	Clean Power Choice Program	2.9¢/kWh	—	50% wind, 50% low impact hydro	—
NJ	PSE&G/JCP&L/Jersey-Atlantic Wind	Clean Power Choice Program: New Jersey Wind Energy	5.5¢/kWh	—	100-kWh new wind	—
NJ	PSE&G/JCP&L/Sterling Planet	Clean Power Choice Program	1.2¢/kWh	—	33% wind, 33% small hydro, 34% bioenergy	Environmental Resources Trust
NY	ConEdison Solutions (8) / Community Energy	GREEN Power	0.5¢/kWh	—	25% new wind, 75% small hydro	Green-e
NY	ECONergy	Keet It Clean	\$.10/day for 100kWh \$.20/day for 200kWh	—	100% new wind	—
NY	Energy Cooperative of New York (9)	Renewable Electricity	0.5¢/kWh to 0.75¢/kWh	—	25% new wind, 75% existing landfill gas	—
NY	Long Island Power Authority / Community Energy	New Wind Energy	2.5¢/kWh	—	new wind	—
NY	Long Island Power Authority / Community Energy	New Wind Energy and Water	1.3¢/kWh	—	60% new wind, 40% small hydro	—
NY	Long Island Power Authority / EnviroGen	Green Power Program	1.0¢/kWh	—	75% landfill gas, 25% small hydro	—
NY	Long Island Power Authority / Sterling Planet	New York Clean	1.0¢/kWh	—	55% small hydro, 35% bioenergy, 10% wind	—
NY	Long Island Power Authority / Sterling Planet	Sterling Green	1.5¢/kWh	—	40% wind, 30% small hydro, 30% bioenergy	—
NY	NYSEG/Community Energy	Catch the Wind/New Wind Energy	2.5¢/kWh	—	100-kWh blocks of new wind	—

State	Company	Product Name	Residential Price Premium1	Fee	Resource Mix2	Certification
NY	Niagara Mohawk / Community Energy	60% New Wind Energy and 40% Small Hydro	1.0¢/kWh	—	60% new wind, 40% hydro	—
NY	Niagara Mohawk / Community Energy	NewWind Energy	2.0¢/kWh	—	new wind	—
NY	Niagara Mohawk / EnviroGen	Think Green!	1.0¢/kWh	—	75% landfill gas, 25% hydro	—
NY	Niagara Mohawk / Sterling Planet	Sterling Green	1.5¢/kWh	—	40% wind, 30% small hydro, 30% bioenergy	Environmental Resources Trust
NY	Niagara Mohawk/Green Mountain Energy	Green Mountain Energy Electricity	1.3¢/kWh	—	50% small hydro, 50% wind	Green-e
NY	Rochester Gas & Electric/Community Energy	Catch the Wind/NewWind Energy	2.5¢/kWh	—	100-kWh blocks of new wind	—
NY	Suburban Energy Services /Sterling Planet	Sterling Green Renewable Electricity	1.5¢/kWh	—	40% new wind, 30% small hydro, 30% bioenergy	—
PA	Energy Cooperative of Pennsylvania (10)	EcoChoice 100	2.78¢/kWh	—	89% landfill gas, 10% wind, 1% solar	Green-e
PA	Energy Cooperative of Pennsylvania (10)	Wind Energy	2.5¢/kWh	—	wind	—
PA	PECO Energy/Community Energy (10)	PECO Wind	2.54¢/kWh	—	100-kWh blocks of new wind	—
PA	PEPCO Energy Services (10)	Green Electricity 10%, 51% or 100% of usage	3.7¢/kWh (for 100% usage)	—	100% renewable	—
PA	PEPCO Energy Services (10)	NewWind Energy 51% or 100% of usage	4.48¢/kWh (for 100% usage)	—	100% new wind	—
RI	Narragansett Electric / Community Energy, Inc.	NewWind Energy 50% or 100% of usage	2.0¢/kWh	—	50% small hydro, 50% new wind	Green-e
RI	Narragansett Electric / People's Power & Light	New England GreenStart RI 50% or 100% of usage	1.5¢/kWh	—	69% small hydro, 30% new wind, 1% new solar	Green-e
RI	Narragansett Electric / Sterling Planet	Sterling Supreme 100%	1.98¢/kWh	—	40% small hydro, 25% biomass, 25% new solar, 10% wind	Environmental Resources Trust
TX	Gexa Energy (11)	Gexa Green	-1.1¢/kWh	—	100% renewable	—
TX	Green Mountain Energy Company (11)	100% Wind Power: Reliable Rate or Month-to-Month	1.46¢/kWh	\$5.34/mo.	wind	—
TX	Green Mountain Energy Company (11)	Pollution Free: Reliable Rate or Month-to-Month	-0.03¢/kWh	\$5.34/mo.	wind and hydro	—
TX	Reliant Energy (11)	Renewable Plan	-1.1¢/kWh	—	wind	—
VA	PEPCO Energy Services (12)	Green Electricity 10%, 51% or 100% of usage	4.53¢/kWh (for 100% usage)	—	landfill gas	—

State	Company	Product Name	Residential Price Premium ¹	Fee	Resource Mix ²	Certification
VA	PEPCO Energy Services (12)	NewWind Energy 51% or 100% of usage	5.33¢/kWh (for 100% usage)	—	new wind	—
VA	Washington Gas Energy Services / Community Energy	New Wind Energy Certificates	2.5¢/kWh	—	100 kWh blocks of new wind	—

1 Prices updated as of July 2005 and may also apply to small commercial customers. Prices may differ for large commercial/industrial customers and may vary by service territory.

2 New is defined as operating or repowered after January 1, 1999 based on the Green-e TRC certification standards.

3 Offered in PEPCO service territory. Product prices are for renewal customers based on annual average costs for customers in PEPCO's service territory (6.8¢/kWh).

4 Price premium is for Central Maine Power service territory based on standard offer of 7.13¢/kWh.

5 Product offered in Baltimore Gas and Electric and PEPCO service territories. Price is for PEPCO service territory based on price to compare of 6.55¢/kWh.

6 Price premium is based on a comparison to the Cape Light Compact's standard electricity product.

7 Green Mountain Energy offers products in Conectiv, JCPL, and PSE&G service territories. Product prices are for PSE&G (price to compare of 6.503¢/kWh).

8 Price premium is based on a comparison to ConEdison Solutions' standard electricity product in the ConEdison service territory.

9 Price premium is for Niagara Mohawk service territory. Program only available in Niagara Mohawk service territory. Premium varies depending on energy taxes and usage.

10 Product prices are for PECO service territory (price to compare of 6.21¢/kWh).

11 Product prices are based on price to beat of 12.1¢/kWh for TXU service territory (specifically Dallas, Texas) (Except where noted). Except for Gexa Green, which is listed in price per kWh, prices based on 1000 kWh of usage monthly, and include monthly fees.

12 Products are available in Dominion Virginia Power service territory

Table 3.8.9: Renewable Energy Certificate (REC) Retail Products, October 2005

Certificate Marketer	Product Name	Renewable Resources	Location of Renewable Resources	Residential Price Premiums*	Certification
3 Phases Energy Services	Green Certificates	100% new wind	Nationwide	2.0¢/kWh	Green-e
Blue Sky Energy Corp	Greener Choice™ Green Tags	Landfill Gas	Utah	1.95¢/kWh	—
Bonneville Environmental Foundation	Green Tags	≥98% new wind, ≤1% new solar, ≤1% new biomass	Washington, Oregon, Wyoming, Montana, Alberta	2.0¢/kWh	Green-e
Clean and Green	Clean and Green Membership	100% new wind	National	3.0¢/kWh	Green-e
Clean Energy Partnership/Community Energy	Mid Atlantic Wind	100% new wind	Mid Atlantic	2.0¢/kWh	Green-e
Clean Energy Partnership/Sterling Planet	National New Clean Energy Mix	24% wind, 25% biomass, 50% landfill gas, 1% solar	National	0.6¢/kWh	Environmental Resources Trust
Clean Energy Partnership/Sterling Planet	National and Regional New Wind	100% new wind	National	1.0¢/kWh	Environmental Resources Trust
Community Energy	New Wind Energy	100% new wind	Colorado, Illinois, New York, Pennsylvania, West Virginia	2.0¢/kWh - 2.5¢/kWh	Green-e
Conservation Services Group	ClimateSAVE	95% new wind, 5% new solar	Kansas (wind), New York (solar)	1.65¢/kWh - 1.75¢/kWh	Green-e
EAD Environmental	100% Wind Energy Certificates	100% new wind	Not specified	1.5¢/kWh	—
EAD Environmental	Home Grown Hydro Certificates	100% small hydro (<5MW)	New England	1.2¢/kWh	—
Green Mountain Energy	TBD (Pennsylvania REC product)	100% wind	National	1.7¢/kWh-2.0¢/kWh	—
Maine Interfaith Power & Light/BEF	Green Tags (supplied by BEF)	≥98% new wind, ≤1% new solar, ≤1% new biomass	Washington, Oregon, Wyoming, Montana, Alberta	2.0¢/kWh	—
Mass Energy Consumers Alliance	New England Wind	100% new wind	Massachusetts	5.0¢/kWh	—
NativeEnergy	CoolHome	New biogas and new wind	Vermont and Pennsylvania (biomass), South Dakota (wind)	0.8¢/kWh - 1.0¢/kWh	**
NativeEnergy	WindBuilders	100% new wind	South Dakota	~1.2¢/kWh, \$12 per ton of CO2 avoided	**
Renewable Choice Energy	American Wind	100% new wind	Nationwide	2.0¢/kWh	Green-e

Certificate Marketer	Product Name	Renewable Resources	Location of Renewable Resources	Residential Price Premiums*	Certification
Renewable Ventures	PVUSA Solar Green Certificates	100% solar	California	3.3¢/kWh	Green-e
SKY energy, Inc.	Wind-e Renewable Energy	100% new wind	Nationwide	2.4¢/kWh	Green-e
Sterling Planet	Green America	45% new wind, 50% new biomass, 5% new solar	Nationwide	1.6¢/kWh	Green-e
TerraPass Inc.	TerraPass	Various (including efficiency and CO2 offsets)	Nationwide	~\$11/ton CO2	—
Waverly Light & Power	Iowa Energy Tags	100% wind	Iowa	2.0¢/kWh	—
WindCurrent	Chesapeake Windcurrent	100% new wind	Mid-Atlantic States	2.5¢/kWh	Green-e

Premium may also apply to small commercial customers. Large users may be able to negotiate price premiums.

Most product prices are as of July 2005.

** The Climate Neutral Network certifies the methodology used to calculate the CO2 emissions offset.

NA = Not applicable.

3.9 – Federal Agency Purchases of Green Power

The federal government exceeded its goal of obtaining 2.5% of its electricity needs from renewable energy sources by September 30, 2005. The federal renewable energy goal was established under Executive Order 13123, issued by President Clinton in 1999. The federal government, which is the nation's largest energy consumer, purchases 2.375 billion kWh of renewable energy annually.

The Energy Policy Act of 2005, signed into law by President Bush on August 8, 2005, establishes a new set of federal renewable energy goals, calling for agencies to derive 3% of their electric energy from renewable sources in fiscal years 2007 through 2009, increasing to 5% in fiscal years 2010 through 2012, and 7.5% by 2013 and each fiscal year thereafter.

3.10 – State Incentive Programs

Many states have policies or programs in place to support renewable energy resources, such as tax incentives; industry recruitment incentives; or grant, loan, or rebate programs. The following table lists the incentives currently available by state (**Table 3.10.1**).

Table 3.10.1 Financial Incentives for Renewable Energy Resources by State

State	Tax Incentives	Grants, Loans, Rebates and Other Incentives
AL	Wood-Burning Heating System Deduction (Personal)	Renewable Fuels Development Program (Biomass, Municipal Solid Waste)
AK		Power Project Loan Fund
AZ	Qualifying Wood Stove Deduction; Solar and Wind Energy Systems Credit (Personal); Solar and Wind Equipment Sales Tax Exemption (Personal)	APS – EPS Credit Purchase Program; SRP – Earthwise Solar Energy; TEP – SunShare PV Buydown; UES – SunShare PV Buydown
AR		
CA	Solar or Wind Energy System Credit – Personal; Tax Deduction for Interest on Loans for Energy Efficiency; Solar or Wind Energy System Credit – Corporate; California Property Tax Exemption for Solar Systems	Emerging Renewable (Rebate) Program; SELFGEN – SELF-Generation Program; Anaheim Public Utilities – PV Buydown Program; Burbank Water & Power – Residential & Commercial Solar Support; City of Palo Alto Utilities – PV Partners; Glendale Water & Power – Solar Solutions Program; IID Energy – PV Solutions Rebate Program; LADWP – Solar Incentive Program; Pasadena Water and Power – Solar Power Installation Rebate; Redding Electric – Earth Vantage Renewable Energy Rebate Program; Riverside Public Utilities – Energy Efficiency Construction Incentive; Riverside Public Utilities – Residential Photovoltaic Incentive Program; Roseville Electric – PV Buy Down Program; SMUD Commercial/Industrial PV Rebate; SMUD – PV Pioneers Residential Buy-Down; SMUD – Solar Water Heater Program Rebate; Ukiah Utilities – PV Buy-Down Program Marin County – Solar Rebate Program; San Diego – Residential Solar Electric Incentive for Homes Destroyed in Wildfires Santa Monica – Green Building Grant Program; SMUD – Solar Water Heater Loan Program; Supplemental Energy Payments (SEPs)
CO		Utility PV Rebate; Holy Cross Energy WE CARE Rebates Aspen Solar Pioneer Program - Solar Hot Water Rebate; Gunnison County Electric - Renewable Energy Resource Loan; Aspen Solar Pioneer Program - Zero-Interest Loan Colorado - Aspen - Grid-Tied Micro Hydro Production Incentive
CT	Local Option for Property Tax	Residential Solar PV Rebate Program; Connecticut - Commercial, Industrial, Institutional PV Grant Program; Connecticut - New Energy Technology Program; Energy Conservation Loan; Operational Demonstration Program; Renewable Energy Projects in Pre-Development Program
DE		Green Energy Program Rebates; Research and Development Grants; Technology and Demonstration Grants
DC		District of Columbia Renewable Demonstration Project
FL	Solar Energy Equipment Exemption	Florida - Gainesville Regional Utilities - Solar Rebate Program; Florida - JEA - Solar Incentive Program
GA		

State	Tax Incentives	Grants, Loans, Rebates and Other Incentives
HI	Residential Solar and Wind Energy Credit; Corporate Solar and Wind Energy Credit	HECO, MECO, HELCO - Energy Solutions Solar Water Heater Rebate; Kaua'i Island Utility Cooperative - Commercial Solar Water Heating Program; Oahu - Energy Solutions Honolulu Solar Roofs Initiative Loan Program; Kauai County - Solar Water Heating Loan Program; Maui County - Maui Solar Roofs Initiative Loan Program for Solar Water Heating
ID	Solar, Wind, and Geothermal Deduction (Personal)	Renewable Energy Equipment Sales Tax Refund; BEF - Renewable Energy Grant; BEF – Solar 4R Schools; Low-Interest Loans for Renewable Energy Resource Program
IL	Special Assessment for Renewable Energy Systems	Illinois Clean Energy Community Foundation Grants
IN	Renewable Energy Systems Exemption	Alternative Power & Energy Grant Program; Distributed Generation Grant Program (DGGP); Energy Education and Demonstration Grant Program; Energy Efficiency and Renewable Energy (EERE) Set-Aside
IA	Renewable Energy Production Tax Credit (Personal); Renewable Energy Production Tax Credit (Corporate); Wind Energy Equipment Exemption; Local Option Special Assessment of Wind Energy Devices; Methane Gas Conversion Property Tax Exemption; Property Tax Exemption for Renewable Energy Systems	Grants for Energy Efficiency and Renewable Energy Research; Alternate Energy Revolving Loan Program; Iowa Building Energy Management Program (Iowa Energy Bank)
KS	Renewable Energy Property Tax Exemption	State Energy Program Grants
KY		Solar Water Heater Loan Program
LA	Solar Energy System Exemption	
ME		Solar Rebate Program; Renewable Resources Matching Fund Program
MD	Personal Income Tax Credit for Green Buildings; Corporate Income Tax Credit for Green Buildings; Wood Heating Fuel Exemption; Local Option - Corporate Property Tax Credit; Special Property Assessment	Solar Energy Grant Program; Community Energy Loan Program; State Agency Loan Program; Montgomery County – Clean Energy Rewards Program
MA	Alternative Energy and Energy Conservation Patent Exemption (Personal); Renewable Energy State Income Tax Credit; Alternative Energy and Energy Conservation Patent Exemption (Corporate); Solar and Wind Energy System Deduction; Solar and Wind Power Systems Excise Tax Exemption; Renewable Energy Equipment Sales Tax Exemption; Local Property Tax Exemption	Commercial, Industrial, & Institutional Initiative Grants; Small Renewables Initiative Rebate; Matching Grants for Communities
MI	Alternative – Energy Personal Property Tax Exemption;	Community Energy Project Grants; Energy Efficiency Grants; Large-Scale PV Demonstration Project Grants; Michigan Biomass Energy Program Grants; Solar Domestic Hot Water System Rebate Program; Small Business P2 Loan Program
MN	Solar-Electric (PV) Sales Tax Exemption; Wind Sales Tax Exemption; Wind and Solar-	State of Minnesota Solar-Electric (PV) Rebate Program; Great River Energy - Solar-Electric (PV) Rebate Program; Minnesota Power Solar-Electric (PV) Rebate Program; Renewable Development Fund

State	Tax Incentives	Grants, Loans, Rebates and Other Incentives
	Electric (PV) Systems Exemption	Grants; Agricultural Improvement Loan Program for Wind Energy; Energy Investment Loan Program; Value-Added Stock Loan Participation Program Renewable Energy Production Incentives
MS		Energy Investment Loan Program
MO	Wood Energy Production Credit	Missouri Schools Going Solar; Energy Loan Program
MT	Residential Alternative Energy System Tax Credit; Residential Geothermal Systems Credit; Alternative Energy Investment Corporate Tax Credit; Corporate Property Tax Reduction for New/Expanded Generating Facilities; Generation Facility Corporate Tax Exemption; Renewable Energy Systems Exemption	NorthWestern Energy - USB Renewable Energy Fund; BEF - Renewable Energy Grant; BEF – Solar 4R Schools; Alternative Energy Revolving Loan Program
NE		Dollar and Energy Savings Loans
NV	Renewable Energy/Solar Sales Tax Exemption; Property Tax Abatement for Green Buildings; Renewable Energy Producers Property Tax Abatement; Renewable Energy Systems Property Tax Exemption	Solar Generations PV Rebate Program
NH	Local Option Property Tax Exemption for Renewable Energy	
NJ	Solar and Wind Energy Systems Exemption	New Jersey Clean Energy Rebate Program; Renewable Energy Advanced Power Program; Renewable Energy Economic Development Program (REED); Renewable Energy Business Venture Assistance Program (REBVAP); Clean Energy Financing for Local Schools and Governments
NM	Renewable Energy Production Tax Credit; Biomass Equipment and Materials Deduction;	Clean Energy Grants Program; Schools with Sol
NY	Solar and Fuel Cell Tax Credit; Solar Cells Tax Exemption; Solar, Wind and Biomass Energy Systems Exemption	Energy \$mart New Construction Program; PV Incentive Program; Wind Incentive Program; LIPA - Solar Pioneer Program; Renewables R&D Grant Program; Energy \$mart Loan Fund
NC	Renewable Energy Tax Credit – Personal; Renewable Energy Tax Credit – Corporate; Active Solar Heating and Cooling Systems Exemption	Energy Improvement Loan Program (EILP)
ND	Geothermal, Solar and Wind Personal Credit; Geothermal, Solar, and Wind Corporate Credit; Hydrogen and Large Wind Sales Tax Exemption; Geothermal, Solar, and Wind Property Exemption; Large Wind Property Tax Reduction	
OH	Conversion Facilities Corporate Tax Exemption; Conversion Facilities Sales Tax Exemption; Conversion Facilities Property Tax Exemption	Residential Renewable Energy Grants; Renewable Energy Loans

State	Tax Incentives	Grants, Loans, Rebates and Other Incentives
OK	Zero-Emission Facilities Production Tax Credit	
OR	Residential Energy Tax Credit; Business Energy Tax Credit; Renewable Energy Systems Exemption	Energy Trust Solar Electric Buy-Down Program; Energy Trust Solar Water Heating Buy-Down Program; Ashland - Solar Electric Program; Ashland Electric Utility - The Bright Way to Heat Water Rebate; EPUD - Solar Water Heater Program Rebate; EWEB - Energy Management Services Rebate; EWEB - The Bright Way To Heat Water Rebate; OTEC - Photovoltaic Rebate Program; Energy Trust Open Solicitation Program; BEF - Renewable Energy Grant; BEF – Solar 4R Schools; Small Scale Energy Loan Program (SELP); Ashland Electric Utility - The Bright Way to Heat Water Loan; EPUD - Solar Water Heater Program Loan; EWEB - Energy Management Services Loan; EWEB - The Bright Way To Heat Water Loan
PA		Sustainable Development Fund Solar PV Grant Program (PECO Territory); Pennsylvania Energy Harvest Grant Program; Metropolitan Edison Company SEF Grants (FirstEnergy Territory); Penelec SEF of the Community Foundation for the Alleghenies Grant Program (FirstEnergy Territory); SEF of Central Eastern Pennsylvania Grant Program (PP&L Territory); Sustainable Development Fund Grant Program (PECO Territory); West Penn Power SEF Grant Program; Metropolitan Edison Company SEF Loans (FirstEnergy Territory); Penelec SEF of the Community Foundation for the Alleghenies Loan Program (FirstEnergy Territory); SEF of Central Eastern Pennsylvania Loan Program (PP&L Territory); Sustainable Development Fund Commercial Financing Program (PECO Territory); West Penn Power SEF Commercial Loan Program
RI	Residential Renewable Energy Tax Credit; Renewable Energy Sales Tax Exemption; Solar Property Tax Exemption	PV & Wind Rebate Program; Small Customer Incentive Program for Green Power Marketers; RFP for Purchase/Sale of Renewable Electricity to Large Customers Renewable Generation Supply Incentive
SC		Residential Solar Initiative for EarthCraft Homes Rebate
SD	Renewable Energy Systems Exemption; Wind Energy Property Tax Exemption	
TN	Wind Energy Systems Exemption	Small Business Energy Loan Program
TX	Solar Energy Device Franchise Tax Deduction; Renewable Energy Systems Property Tax Exemption	Austin Energy - Home Energy Air Conditioning and Appliance Rebates; Austin Energy - Solar Rebate Program
UT	Renewable Energy Systems Tax Credit – Personal; Renewable Energy Systems Tax Credit – Corporate; Renewable Energy Sales Tax Exemption	
VT	Sales Tax Exemption	Solar & Small Wind Incentive Program; CVPS Biomass Grants
VA	Local Option Property Tax Exemption for Solar	Virginia Small Wind Incentives Program (VSWIP)
WA	Sales and Use Tax Exemption	Clallam County PUD - Solar Rebate Program; Clark Public Utilities – Solar Water Heater Rebate Program; Grays Harbor PUD - Solar Water Heating Rebate; Klickitat PUD – Solar Rebate; Orcas Power & Light - Photovoltaic Rebate; Puget Sound Energy - Solar PV System Rebate; Franklin PUD – Photovoltaic and Solar Water Heating Rebate;
WV	Tax Exemption for Wind Energy Generation; Special Assessment for Wind Energy Systems	

State	Tax Incentives	Grants, Loans, Rebates and Other Incentives
WI	Solar and Wind Energy Equipment Exemption	Focus on Energy - Cash-Back Reward; Wisconsin Public Power, Inc. – Residential Renewable Energy Rebate; Focus on Energy - Grant Programs; Focus on Energy – Zero-Interest Loans; Wisconsin Public Power, Inc. – Residential Renewable Energy Loan
WY	Renewable Energy Sales Tax Exemption	Photovoltaic Incentive Program

Source: North Carolina Solar Center, Database of State Incentives for Renewable Energy, <http://www.dsireusa.org/summarytables/financial.cfm?&CurrentPageID=7>, November 2005.