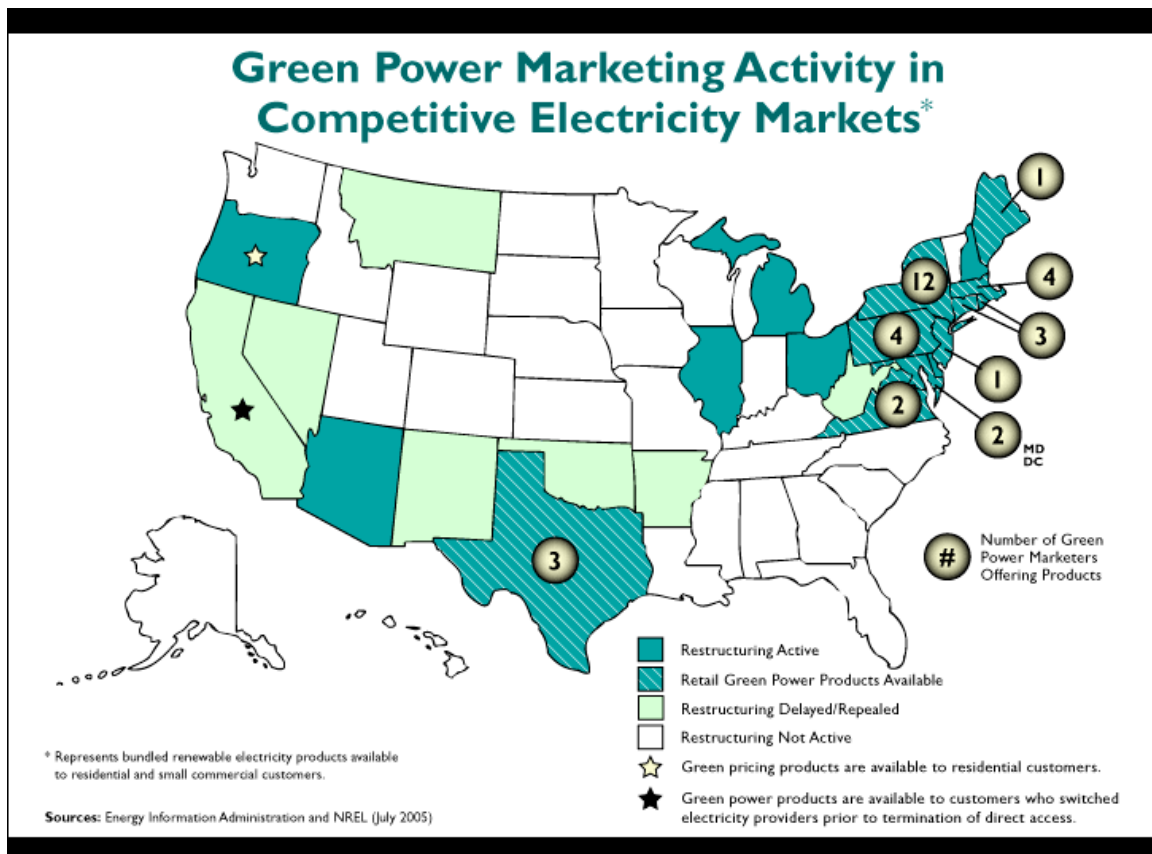


3.8 – Competitive Green Power Offerings and Renewable Energy Certificates

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.