CRS center for resource solutions

2010 Green-e Verification Report

Green-e® is the nation's leading independent certification and verification program for renewable energy and greenhouse gas emission reductions in the voluntary market. There are three Green-e programs: Green-e Climate is a certification program that sets consumer-protection and environmental-integrity standards for carbon offsets sold in the voluntary market. Green-e Energy is North America's leading independent certification and verification program for renewable energy. Green-e Marketplace recognizes companies that make meaningful commitments to use renewable energy by allowing them to display the Green-e logo when they have purchased a qualifying amount of renewable energy and passed the program's verification standards.

Green-e®

2010 HIGHLIGHTS

Total retail sales of Green-e Energy Certified renewable energy **exceeded 23 million MWh, an increase of over 23% from 2009**

Over 583,000 residential customers and more than 66,000 non-residential customers across the U.S. and Canada purchased Green-e Energy Certified renewable energy, increases of 7% and 77%, respectively

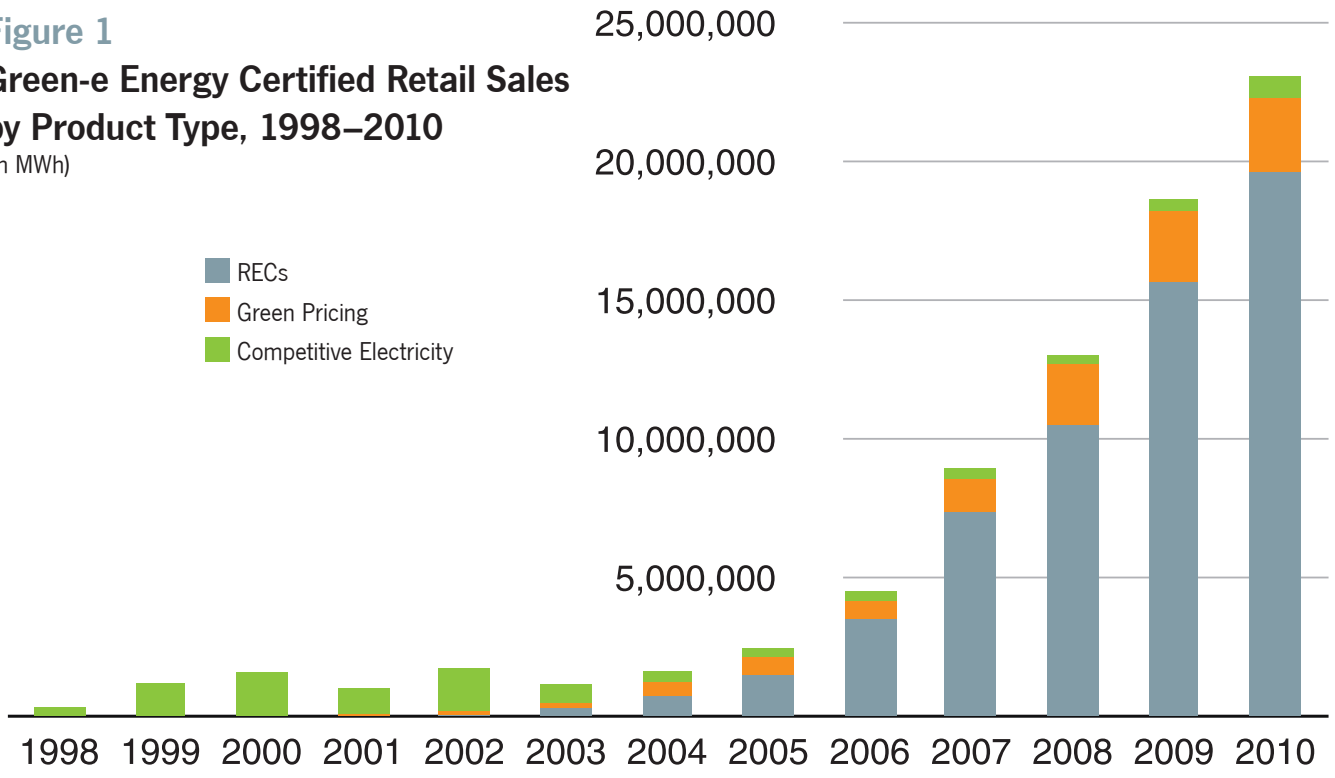
Green-e Energy certified **65% of all retail sales** in the voluntary renewable energy market in 2010[1]

Renewable energy purchases and onsite generation by Green-e Marketplace participants totaled over **393,000 MWh**

Sales of Green-e Climate Certified carbon offsets in 2010 resulted in over **202,000 metric tons CO_2-equivalent reduced, a nearly 15% increase from 2009**

Figure 1

Green-e Energy Certified Retail Sales by Product Type, 1998–2010
(in MWh)



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Green-e Climate

Launched in 2008 and having grown substantially in 2009, Green-e Climate grew again by 15% and surpassed 200,000 metric tons of certified sales in 2010.

Green-e Climate is the first and only consumer protection and certification program for carbon offsets offered by sellers in the voluntary market. The program streamlines all of the vital elements of a credible offset into a single, consumer-facing certification mark and provides offset purchasers with the assurances needed to make an effective purchase. It is intended to strengthen and improve credibility in the voluntary carbon market and thereby promote the use of carbon offsets by individuals and companies to reduce their greenhouse gas footprints.

Since offset sellers create unique carbon products (offsets) from various types of greenhouse gas (GHG) emissions reductions and carbon credits of different quality and origin, even where robust project standards and certification programs exist in the market there is a transparency gap between end-use consumers purchasing from sellers and the project where the reduction occurs. Green-e Climate certification fills this gap by ensuring that certified offset products contain only verified reductions from projects that meet high-quality, endorsed standards. Green-e Climate ensures that participating offset sellers obtain and retire correct volumes and types of emissions reductions on behalf of their customers based on what was sold, preventing double-selling. In this way, Green-e Climate is the only offset certification program that covers the entire chain of custody of reductions, ensuring that what is being sold in the market (in addition to what is being generated) is legitimate. Green-e Climate also sets and enforces customer disclosure requirements to ensure offsets are sold as advertised and that full and accurate information is provided to the consumer.

Sellers of Green-e Climate Certified offsets must undergo an annual independent audit of their supply and sales, as well as a twice-annual review of their website and marketing materials. Presented here is data (in aggregate form) from the verification audit for reporting year 2010.

Summary

As Green-e Climate's third year of operation, 2010 gives the program that crucial third data point needed to begin assessing general trends—and they are positive. Certified sales of Green-e Climate Certified offsets (and the underlying transactions of verified GHG emissions reductions completed for these sales) grew by more than 15% to total 202,897 unique metric tons carbon dioxide-equivalent (tCO2e).[2]

Nine participating offset sellers offered a total of 19 certified offset products and sourced from 29 different GHG reduction projects. The majority of projects utilized in 2010 were renewable energy projects (accounting for 73% of supply), followed by coal mine methane capture, landfill methane capture, and livestock methane capture projects. Projects supplying certified products in 2010 were located in the United States, China, and Brazil.

Green-e Climate Certified sales have experienced double-digit growth in each of the two years since its launch. We expect this trend to continue as recognition of the program grows. Such sustained growth even in the context of wide fluctuations in the overall over-the-counter market during its existence is indicative of the value of the program's unique assurances for the retail market as well as a clear advantage in the market for sellers with Green-e Climate Certified products.

Project Certifications

Green-e Climate Certified offsets contain only reductions from projects registered under an endorsed project certification program's ("Endorsed Program") eligible protocols and project types. The Green-e Climate Endorsed Programs for 2010 included the Clean Development Mechanism (CDM), the Gold Standard, the Verified Carbon Standard (VCS; formerly the Voluntary Carbon Standard), the Climate Action Reserve, and the Green-e Climate Protocol for Renewable Energy (PRE).

The majority of supply (verified reductions and certified credits) used for

2010 Green-e Climate Participants
3Degrees Inc.
The Bonneville Environmental Foundation (BEF)
The CarbonNeutral Company
Community Energy, Inc.
Conservation Services Group
Hess Corporation
Luminant Energy
NextEra Energy Resources
Sterling Planet

Green-e Climate Certified sales came from the PRE (72%), a carbon offset project standard for U.S. renewable energy projects developed by Center for Resource Solutions. However, this number has decreased as the proportion of supply from VCS, a global GHG accounting program used by projects to verify and issue carbon credits in voluntary markets, has increased steadily. The amount of Verified Carbon Units (VCUs) supplying Green-e Climate Certified products increased a dramatic 150% in 2010, to represent a quarter of the total supply used. 2010 was also the first year that Green-e Climate Certified sales of Verified Emissions Reductions (VERs) from The Gold Standard, a program that registers projects that reduce GHG emissions while contributing to sustainable development and certifies their carbon credits, which are sold on both compliance and voluntary offset markets. Additionally, the first certified product containing Climate Reserve Tonnes from the Climate Action Reserve, a national offsets program that establishes regulatory-quality standards for the verification of GHG emissions reduction projects in North America, was added in late 2010. We expect to see these three programs account for the majority of supply in the coming years.

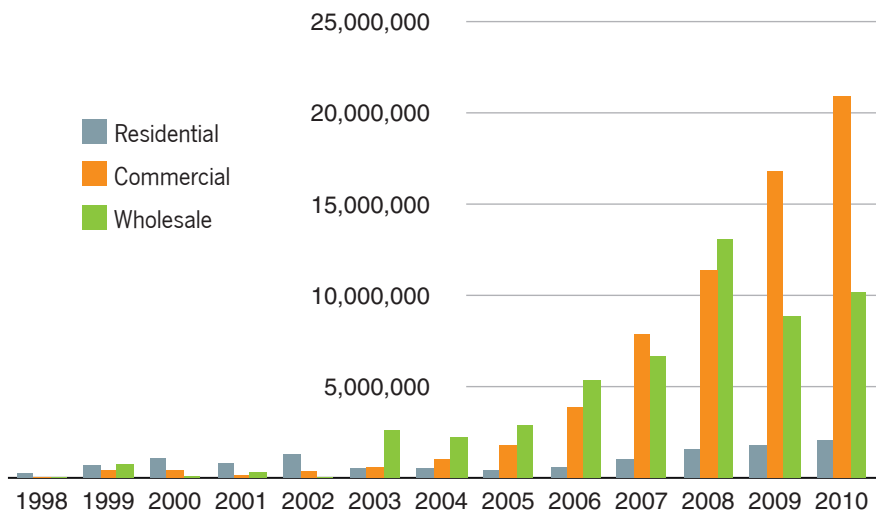
The vast majority of supply from the PRE came from wind projects, and mostly from Texas and the Midwest, though projects in the western states and Alaska also contributed. Remaining supply from the PRE came from California solar. Supply from VCS was mostly all from coal mine methane in Wyoming, though Chinese and Brazilian renewable energy projects as well as landfill methane in South Carolina also contributed. Supply from The Gold Standard was from renewable energy in China.

Table 1 **Green-e Climate Certified Sales, 2008–2010 (sales rounded)**

	2008	2009	2010
Total Certified Sales*	151,000	176,000	203,000
Number of Certified Offset Products	14	16	19
Number of Program Participants	8	10	9
Number of Projects	18	23	29

** in metric tons CO_2-equivalent*

Figure 2 **Green-e Energy Certified Sales by Customer Type, 1998–2010 (in MWh)**



Customer Breakdown

Sales of Green-e Climate Certified offsets were primarily made through individually negotiated transactions to commercial customers. Online sales and sales to individuals were just over 1% of total certified sales.

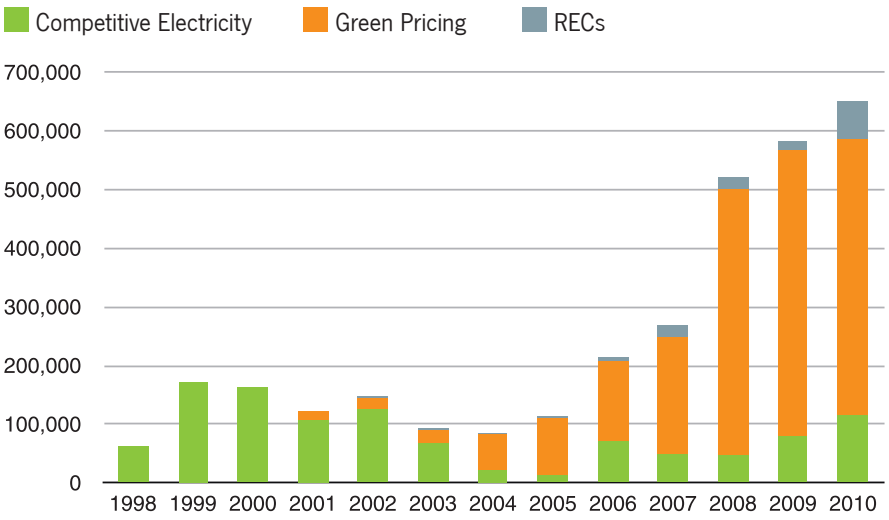
The vast majority of customers and the vast majority of sales were made to customers located in the United States, although Australia, Canada, China, Brazil, and Singapore were all also represented in 2010. Within the U.S., New York hosted the greatest number of commercial customers, followed by Massachusetts and Ohio. However, commercial customers in Florida purchased the greatest amount of offsets in 2010, followed by Washington and New York. The state with the greatest number of individual customers in 2010 was Oregon, followed by Massachusetts and California.

Green-e Energy

Green-e Energy is the leading certification program for voluntary renewable energy products in North America. On behalf of consumers buying renewable energy products certified by Green-e Energy, the program requires that certified Renewable Energy Certificate (REC) products, utility green pricing programs, and competitive electricity products undergo an independent annual audit to demonstrate compliance with Green-e Energy's rigorous consumer-protection and environmental standards. Green-e Energy requires that sellers of certified renewable energy products provide full and accurate information to their customers, deliver the renewable energy they promise, and source from renewable energy generators that meet Green-e Energy's resource eligibility requirements, developed by stakeholders over the past 14 years. When Green-e Energy began in 1997, it was the first certification program of its kind, and it has remained the most respected renewable energy certification program in the United States.

This section presents the market activity of Green-e Energy Certified products during 2010. The information presented includes aggregate data from all Green-e Energy program participants, highlighting

Figure 3 **Retail Customers Purchasing Green-e Energy by Product Type, 1998–2010 (number of customers)**



sales figures, customer types, and product resource mix for 2010 and previous years.

Summary

Total Green-e Energy Certified retail transactions to customers using renewable energy reached an all-time high of over 23 million megawatt-hours (MWh), an increase of over 23% from 2009, and representing 65% of all retail sales in the voluntary market in 2010.[3]

The total volume of all Green-e Energy Certified transactions in 2010 reached 33 million MWh, a nearly 21% increase from the 2009 total. This total represents transactions of all types, including both certified retail and wholesale transactions. Retail sales refer to certified renewable energy products sold or donated to residential, non-residential, commercial, institutional or industrial customers, or to any customer that will use the purchased renewable energy to make specific renewable energy claims about its electricity use. Wholesale transactions are sales made to customers that resell the renewable MWh without making their own green electricity use claim.

Green-e Energy Certified wholesale transactions exceeded 10.2 million MWh in 2010. Of these certified wholesale transactions, over 5.7 million MWh were resold in Green-e Energy Certified retail transactions. The remaining 4.5 million MWh were sold in non-Green-e Energy Certified transactions to utilities and electric service providers, power marketers, and other buyers in the voluntary market.[4]

Removing the instances of renewable energy certified by Green-e Energy at both the wholesale and retail levels, Green-e Energy certified sales of over 27.5 million unique MWh in 2010. This is an increase of over 26% from 2009. Assuming that all MWh certified at the wholesale level were ultimately sold in retail voluntary market sales, 78% of the total MWh sold in the retail voluntary market in 2010 were involved in a Green-e Energy Certified transaction at some point in their chain of custody.[5]

This increase is part of a growing trend partially fueled by increased awareness among consumers and businesses about the benefits of certified renewable energy, and their growing willingness to support it financially. As the public's awareness of the impacts of pollution arising from electricity generation, energy security issues, and sustainable economic development rises, the demand for renewable energy has increased greatly. In fact, voluntary renewable energy sales in the U.S. have increased an average of 31% each year since 2006.[6]

Renewable energy is sold in three different types of products:

- **Renewable Energy Certificates (RECs).** A REC represents the non-energy attributes, including all the environmental attributes, of one MWh of renewable electricity generation. The renewable energy market has developed the REC as a tradable commodity of renewable energy attributes that can be sold separately from the underlying electricity, allowing for a larger and more efficient national market for renewable energy.[7]
- **Green Pricing Programs.** Renewable electricity sold by electric utilities in regulated electricity markets to customers that sign up to receive renewable electricity beyond what is included in standard electricity service.
- **Competitive Renewable Electricity.** Similar to a green pricing program, but sold by an electric service provider (ESP) in a deregulated electricity market.

Table 2 **Total Green-e Energy Certified Sales of Renewable Energy by Product Type and Customer Type, 2010 (MWh, rounded)**

	Retail		
	Residential	Commercial	Wholesale
RECs	342,000	19,323,000	10,130,000
Green Pricing	1,508,000	1,152,000	0
Competitive Electricity	276,000	491,000	96,000
Total Sales	2,126,000	20,967,000	10,226,000

Total Retail: 23,093,000 MWh
Total Unique Certified: 27,563,000 MWh
Total Certified Transactions: 33,319,000 MWh

In 2010, retail REC sales grew to over 19.6 million MWh, a 25% increase from 2009. Wholesale REC sales grew to 10.1 million MWh, an increase of 15% over the same period. Utility green pricing sales grew by a modest 4% to over 2.6 million MWh. Retail competitive electricity retail sales rose to 767,000 MWh, a dramatic increase of 87% from 2009, while wholesale competitive electricity sales increased by 14% to 96,000 MWh. Figure 2 charts sales growth over the past 13 years by type of customer.

Figure 3 illustrates the growth in sales of each Green-e Energy Certified retail product type from 1998 to 2010. During this period, certified renewable energy sales grew considerably, with RECs accounting for the largest amount of MWh sold and achieving steady growth. Competitive electricity product sales have started to increase in recent years, while growth for green pricing programs has slowed slightly within the last year.

Table 3 Top Ten States Purchasing Retail Green-e Energy Certified Renewable Energy by Percent of Total Retail Sales (MWh), 2010

NY	10%
TX	10%
PA	8%
MN	7%
AZ	7%
CA	7%
WA	6%
NJ	4%
D.C.	4%
MD	4%

Table 4 Top Ten States by Highest Number of Retail Customers, 2010

TN	20%
CA	10%
TX	8%
WA	7%
OR	7%
CO	7%
NY	6%
WI	5%
MI	5%
UT	5%

Figure 4 States With Green-e Energy Certified Renewable Electricity Options, 2010

RECs are available to buyers regardless of location.

2010 saw a tremendous increase in the amount of renewable energy customers are purchasing. Of the 23 million MWh of certified retail sales, residential sales made up 9% with non-residential sales[8] comprising the remaining 91%. In 2010, residential sales grew by 17% and non-residential sales grew by nearly 25% on a MWh basis compared to 2009. Wholesale volumes increased over 14% from 2009.

Table 2 lists 2010 sales by customer type and product type purchased. Noteworthy trends include a dramatic 755% jump in residential REC sales volume and non-residential REC sales growth of 23% over 2009 levels. Additionally, non-residential sales of certified competitive electricity products grew by 162% over 2009 numbers.

Figure 3 illustrates the number of customers buying each type of retail renewable energy product over recent years. Green pricing customers continue to constitute the vast majority of the overall number of purchasers, although the number of green pricing customers decreased slightly by 3%. The number of REC customers increased an impressive 287%, and competitive electricity customers grew by 45%. Overall, across the different types of retail products, the number of customers grew over 11% in 2010.

In 2010, 68 REC marketers and brokers and 219 green pricing utilities and their distributors participated. At the same time, the number of competitive electricity providers increased from 10 to 11.

The number of states in which electricity users have access to Green-e Energy Certified electricity products (both green pricing and competitive electricity) remained at 30 states in 2010. Figure 4 shows a map highlighting these states. Table 3 lists the states with largest purchase volume, Table 4 lists the top ten states by number of customers, and Table 5 lists the top ten states by contribution of renewable energy generation used in Green-e Energy certified retail sales in 2010. The difference between states with generators and purchasers of renewable energy demonstrates how the national market for RECs is allowing customers without access to local renewable energy products to support changes in the national generation portfolio.

Figure 5 demonstrates the breakdown of resource mix delivered in certified retail products in 2010. This overall breakdown

Green-e Program Governance

Green-e Energy and Green-e Climate are governed by an independent board called "The Green-e Governance Board" (Board). CRS serves as the Program administrator. The Board ensures that the Program's standards and policies are appropriate and necessary to meet its stated goals and objectives, and that certification and verification are handled in a credible and effective manner. The Board regularly reviews the Program's standards in consultation with stakeholders and amends them as necessary so that they remain consistent with changing circumstances and evolve with market conditions.

is consistent with 2009 with only slight variations, and it is notable that wind continues to dominate retail sales at 79%.

Green-e Energy Certified renewable energy products are generated without many of the harmful environmental pollutants released by electricity generated using fossil fuel sources such as coal and natural gas. Compared to the unique number of MWh sold in retail Green-e Energy Certified sales in 2010, an equivalent amount of average system power would have produced emissions to the atmosphere of over 18.7 million metric tons of CO_2, the leading greenhouse gas contributing to global climate change; 37,000 metric tons of SO_2, a cause of acid rain; and 24,000 metric tons of NOx, which causes smog and ground-level pollution.[9]

Overview of Verification Requirements and Process

The data referred to in this report represents the verified sales of all certified renewable energy products sold by Green-e Energy participants in 2010. As part of product certification, participants must submit audited supply and sales information to Green-e Energy every year. This allows Green-e Energy to verify the transactional history of each MWh sold to ensure that renewable energy is not being double counted, and each customer is receiving the appropriate amount of Green-e Energy Certified renewable energy. Through this process Green-e Energy also verifies that the sources of renewable energy meet the *Green-e Energy National Standard*, which defines what types of new, clean, and renewable energy are suitable for Green-e Energy Certified products.[10]

Renewable Energy Certificates

Green-e Energy Certified purchases of RECs allow consumers to purchase renewable energy for their home or business. A REC represents the non-energy attributes of one MWh of renewable electricity generation, which can be matched up with one MWh of average grid electric power. Green-e Energy Certified RECs are not claimed by more than one party, and since they are sold on the voluntary market, they cannot count towards a state's renewable-energy mandate.

In 2010, eight new REC marketers joined the program while nine voluntarily terminated participation.

Table 6 lists the total number of REC marketers and the number of certified products they offered in 2010, with historical reference going back to 2002.

Table 7 summarizes Green-e Energy Certified REC sales in 2010. The number of MWh sold to retail customers rose 25% and purchases by non-residential customers rose 23% in 2010, which speaks to the growing importance renewable energy holds with commercial enterprises. At the same time, residential REC sales volume increased by 755%, showing increased awareness and interest in RECs among residential customers. Green-e Energy Certified wholesale REC transactions increased by 15% from 2009 levels. Many Green-e Energy Certified wholesale RECs are sold to other Green-e Energy participants, who then resell the same MWh in their own certified retail transactions. In 2010, a total of 10.1 million MWh was certified at the wholesale level; of this over 5.7 million MWh were certified again in retail REC transactions. By subtracting the number of MWh sold in wholesale transactions that were again sold in certified retail transactions from the total of all Green-e Energy Certified wholesale REC transactions, the total unique number of MWh that Green-e Energy certified in 2010 can be calculated. The unique number of RECs sold in 2010 in certified transactions at either the retail or wholesale level exceeded 24 million MWh, a 28% increase from 2009.

The resource types supplying certified retail REC sales in 2010 are very similar to the previous year with a slight increase in the share for biomass from 10% to 12%, and wind representing 78%.

Utility Green Pricing Programs

Green-e Energy Certified utility green pricing programs offer their electricity customers the ability to purchase renewable energy for their home or business above and beyond the amount of renewable energy that is already included in the default electricity mix served to most customers. By doing so, these programs allow individuals to support renewable energy above any state renewable energy goals or mandates, such as Renewable Portfolio Standards.

Table 8 presents the number of utilities offering certified green pricing programs since 2001. In 2010, two new utilities joined, one voluntarily left the program,

Table 5 Top Ten States Supplying Renewable Energy to Green-e Energy Certified Retail Sales by Percent of Total MWh, 2010

TX	21%
IA	18%
ND	7%
KS	7%
OK	6%
MO	3%
FL	3%
ID	3%
MN	3%
OR	2%

Table 6 Marketers Offering Green-e Energy Certified RECs, 2002–2010

Year	Marketers Offering Green-e Energy Certified REC Products	Number of Green-e Energy Certified REC Products
2002	7	11
2003	18	23
2004	21	29
2005	21	28
2006	27	37
2007	49	59
2008	69	80
2009	68	73
2010	**68**	**74**

Table 7 Green-e Energy Certified Sales of RECs by Customer Type, 2010

	2010 Sales (MWh, rounded)	Percent Change From 2009	Percent of Total REC Sales	Customers	Average Renewables Purchase Size (MWh)
Residential	342,000	755%	1.7%	54,900	6
Non-Residential	19,323,000	23%	98.3%	8,590	2,250
Total Retail	**19,665,000**	**25%**	**100.0%**	**63,490**	
Wholesale	10,130,000	15%		120	84,420

and one began selling RECs instead of bundled green electricity. Including their distributor retail utilities, the number of providers of certified green pricing programs increased to a total of 219 participating utilities. The number of states where certified green pricing programs are available increased from 21 to 23.

Table 9 summarizes certified green pricing sales in 2010 and the change from 2009 sales by customer types. Overall, certified green pricing sales increased by 4% in 2010.

In 2010, the number of customers participating in Green-e Energy Certified green pricing programs decreased by 3%.

The National Renewable Energy Laboratory annually releases a rating of utility green pricing programs[11] based on a number of criteria, including the program's participation rate, the total number of subscribers, and the number of MWh sold. In 2010 Green-e Energy Certified green pricing programs were very well represented in each category. The following Green-e Energy Certified programs were ranked among the top ten in following categories:

- **Highest participation rate:** City of Palo Alto, Sacramento Municipal Utilities District (SMUD), Silicon Valley Power, Pacific Power (Oregon only), River Falls Municipal Utilities, Stoughton Utilities, Lake Mills Light & Water[12]
- **Total number of subscribers:** PacifiCorp, Xcel Energy, SMUD, Puget Sound Energy, We Energies
- **Total MWh sold:** Austin Energy, PacifiCorp, SMUD, Xcel Energy, Puget Sound Energy, We Energies

Table 8 Utilities Offering Green-e Energy Certified Green Pricing Programs, 2001–2010

Year	Utilities with Green-e Energy Certified Green Pricing Programs	...Including Number of Retail Distributors	Number of States with Green-e Energy Certified Green Pricing Programs
2001	2	n/a	7
2002	4	51	8
2003	5	70	9
2004	7	72	11
2005	8	105	12
2006	11	117	13
2007	15	141	17
2008	24	202	24
2009	**25**	**219**	**21**
2010	**26**	**221**	**23**

The resource mix used to supply Green-e Energy Certified green pricing programs in 2010 differed from the previous year in that non-gaseous biomass decreased its share of the total from 10% to 3%, and wind increased its share from 77% to 82% compared to 2009.

Competitive Electricity Products

In deregulated electricity markets, electric service providers (ESPs) can offer Green-e Energy Certified renewable electricity products. Table 10 lists historical participation by ESPs in Green-e Energy. In 2010, the number of participants increased from 10 to 11, and the number of products offered rose from 13 to 15. These products were offered in 9 states.

Table 9 Green-e Energy Certified Sales in Green Pricing Programs by Customer Type, 2010

	2010 Sales (in MWh, rounded)	Percent Change from 2009	Percent of Total Green Pricing Sales	Customers	Average Renewables Purchase Size (MWh)
Residential	1,508,000	-3%	57%	453,900	3
Commercial	1,152,000	15%	43%	18,030	64
Total	**2,660,000**	**4%**	**100%**	**471,930**	

Table 10 ESPs Offering Green-e Energy Certified Electricity Products, 1998–2010

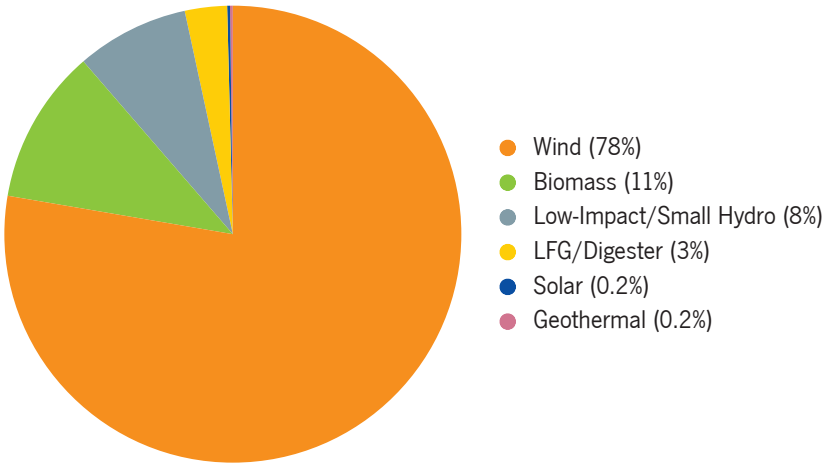
Year	Suppliers of Green-e Energy Certified Competitive Electricity Products	Number of Green-e Energy Certified Competitive Electricity Products
1998	11	15
1999	11	18
2000	17	27
2001	16	26
2002	9	19
2003	14	37
2004	13	27
2005	11	16
2006	12	17
2007	13	17
2008	13	20
2009	10	13
2010	**11**	**15**

Residential competitive electricity sales increased by 23% in 2010, and non-residential sales increased by 162%. The number of non-residential customers dramatically increased by 168%. The number of residential customers purchasing a competitive electricity product increased by 17%. Table 11 breaks down competitive electricity sales by customer type, average purchase size, and change from 2009 sales.

Wholesale transactions of competitive electricity grew 14% compared to 2009. After removing transactions on the wholesale level that were eventually sold into a certified retail product, the unique number of MWh sold in certified competitive electricity sales came to over 863,700, a 96% increase from 2009.

Similar to 2009, the resource types used to supply certified retail competitive electricity products in 2010 was entirely made up of wind and biomass. Wind

Figure 5 Contributions of Renewable Resource Types to Total Green-e Energy Certified Retail Sales, 2010



2010 Green-e Energy Participating REC Marketers and Brokers

3 Phases Renewables
3Degrees
American Municipal Power, Inc (AMP)
Arizona Public Service (APS)
BlueStar Energy Services
Bonneville Environmental Foundation (BEF)
Carbon Solutions Group
Carbonfund.org
Choose Renewables
Clean Currents
Community Energy, Inc.
Community Green Energy, LLC
ConEdison Solutions (ConEd)
Constellation Electric dba BGE Home
Constellation NewEnergy
Consumers Energy Company
Direct Energy
Dominion Virginia Power
Duke Energy
EcoElectrons Renewable Energy
EDF Trading
Element Markets, LLC
Empire District Electric
Energy Plus Holdings LLC
Evergreen Wind Power, LLC
Evolution Markets
Exelon Energy Company
Glacial Energy V.I.
Good Energy
Green Energy Marketing, Inc.
Green Mountain Energy Company
GT Environmental Finance
Hampton Lumber Mills - Washington, Inc.
Heritage Sustainable Energy
Hess Corporation
Iberdrola Renewables
ICAP United, Inc.
Integrys Energy Services, Inc.
J.P. Morgan Ventures Energy Corporation
Luminant Energy Company, LLC
NativeEnergy
New York Power Authority
Nexant Clean Energy Markets
NextEra Energy Resources, LLC
Noble Americas Energy Solutions LLC
OneEnergy Renewables
PacifiCorp
Powerex Corp
Puget Sound Energy (PSE)
Reliant Energy
Renewable Choice Energy
Sacramento Municipal Utility District (SMUD)
Santee Cooper
Shell Energy North America
Silicon Valley Power - City of Santa Clara
Soltage
Sterling Planet, Inc.
Suez Energy Resource NA, Inc.
SunPower Corporation
The CarbonNeutral Company
TransAlta
Viking Wind Partners, LLC
Village Green Energy
Wabash Valley Power Association
Washington Gas Energy Services (WGES)
WindCurrent
WindStreet Energy
Xcel Energy

Table 11 **Green-e Energy Certified Sales of Electricity by ESPs by Customer Type, 2010**

	2010 Renewable Sales (MWh, rounded)	Percent Change from 2009	Percent of Total Competitive Electricity Sales	Customers	Average Renewable Purchase Size (MWh)
Residential	276,000	23%	36%	75,030	4
Commercial	491,000	162%	64%	39,780	12
Total Retail	**767,000**	**87%**	**100%**	**114,810**	
Wholesale	96,000	14%		2	48,000

maintained its share at 94% and biomass equaled 6%.

Conclusions

The volume of sales and number of customers of Green-e Energy Certified renewable energy reached all-time highs in 2010. Non-residential purchasers as a whole bought 23% more RECs, 15% more renewable electricity in green pricing programs, and 162% more through competitive electricity products than in 2009.

Residential customers purchased 755% more RECs and 23% more in competitive electricity products. Wholesale product sales increased by more than 14%. In addition, the number of non-residential and residential customers overall increased by 77% and 7% respectively. Despite the down economy and increased compliance obligations for state renewable portfolio standards, commercial purchases of renewable energy continue to thrive and grow.

Evident from the impressive growth of the program is that the voluntary renewable energy market is reaching an increasingly large number of customers who clearly value purchasing renewable energy that is Green-e Energy Certified.

As a growing number of customers support renewable energy in ever increasing amounts, the voluntary market sends a strong demand signal. When compared to generation from new facilities being used in compliance markets, voluntary retail sales of renewable energy account for 39% of MWh being sold into compliance and voluntary markets in total.[13] As the past 14 years of Green-e Energy have demonstrated, voluntary demand for renewable energy continues to rival the compliance market in creating a market for new renewable energy.

Green-e Marketplace

In 2010, Green-e Marketplace continued to expand the total number of products carrying the Green-e logo as well as initiating a new program initiative called re:print, focused on using renewable energy throughout the paper and printing supply chain. As a result of over 500 products achieving certification through Green-e Marketplace and displaying the Green-e logo, national recognition of the mark is one of the highest for the non-governmental environment certifications.[14]

Green-e Marketplace increased the diversity of its program by introducing a number of new program features. It implemented a series of educational webinars providing insight into relevant topics such as carbon supply chain management, FTC Green Guides, and insights into the renewable energy market. Green-e Marketplace staff took many presentations on the road as they traveled to a variety of conferences speaking on the benefits of renewable energy and communicating with consumers. In addition to its annual participant survey, Green-e Marketplace also began a series of case studies, highlighting the renewable energy commitments of its participants. Green-e Marketplace also continued to build on and rely on its outside advisory council and membership subgroups to help increase program feedback and participant involvement in program development.

Overall, 51 organizations participated in Green-e Marketplace over the course of 2010. Renewable energy purchases and onsite generation in 2010 by Green-e Marketplace participants totaled nearly 394,000 MWh.[15] Among Green-e Marketplace participants, Sappi Fine Paper of North America and Mohawk used the most Green-e Certified renewable energy. Almost 90% of participants matched 100% of their organization's electricity usage with Green-e Energy Certified renewable energy. Eighty percent of Green-e Marketplace participants met their commitment needs through RECs, with 11% enrolled in utility green pricing programs, and 9% used on-site renewable energy generation that met the *Green-e Energy National Standard*. ●

NOTES

1. Based on preliminary figures from the National Renewable Energy Laboratory.
2. Based on size of the voluntary OTC market in 2010 as reported in Peters-Stanley, Molly et al. June 2, 2011. *Back to the Future: State of the Voluntary Carbon Markets 2011*. A report by Ecosystem Marketplace & Bloomberg New Energy Finance. 93pp. Available online at: www.forest-trends.org/documents/files/doc_2828.pdf.
3. Based on preliminary figures from the National Renewable Energy Laboratory (NREL).
4. For sales that are not Green-e Energy Certified, Green-e Energy does not have data on customer or market type.
5. Based on preliminary figures from NREL.
6. ibid.
7. Center for Resource Solutions, "Best Practices in Public Claims for Green Power Purchases and Sales v.1," www.Green-e.org/docs/energy/Best%20Practices%20in%20Public%20Claims.pdf. For more information on RECs, see www.green-e.org/learn_recs_101.shtml.
8. "Non-residential" includes all sales to non-residential retail consumers, including commercial, industrial, institutional, and government purchasing.
9. Number based on the 2007 NERC Region non-baseload output emission rates as published by the EPA, eGRID2010 Version 1.1 Year 2007 Summary Tables (Created May 2011). www.epa.gov/cleanenergy/documents/egridzips/eGRID2010V1_1_year07_SummaryTables.pdf, as described in the Green-e Energy Code of Conduct and Customer Disclosure Requirements.
10. Definitions of eligible renewables:
    All renewables generated for a Green-e Energy Certified product sold in 2010 must come from facilities built on or after January 1, 1997. Solar, Wind and Geothermal energy are all eligible. Hydroelectric power must come from facilities that are run of the river hydro under 5MW in capacity or from facilities that have received Low-Impact Hydro certification. Types of eligible biomass includes woody, agricultural, and organic wastes, energy crops, and landfill and wastewater methane. Biomass supply is non-eligible if resources are treated or coated with chemicals and other non-organic materials. For a detailed description of eligibility requirements, please see the Green-e Energy National Standard available on the Green-e website at www.green-e.org/getcert_re_stan.shtml.
11. U.S. Department of Energy, "Top Ten Utility Green Power Programs" at apps3.eere.energy.gov/greenpower/resources/tables/topten.shtml.
12. River Falls Municipal Utilities, Stoughton Utilities, and Lake Mills Light & Water are distributors for WPPI Energy.
13. Based on preliminary figures from NREL.
14. BBMG Conscious Consumer Report: Redefining Value in a New Economy (2009). Available at www.bbmg.com.
15. Companies that participate in Green-e Marketplace and use certified on-site renewable electricity that meets the *Green-e Energy National Standard* are included in the totals for retail RECs.

2010 Green-e Marketplace Participants

Americraft
Aromafloria
Avatar New York
Aveda
Beaulieu Commercial
Becton Dickinson
BurstNET Technologies
Buywell International, Inc.
Carolina Plantation Rice
Cascades Tissue Group, Sales Inc.
Choice Organic Teas
Codero
CTI Paper Group
Darlington Raceway
Designarchy
Garden of Life
Graphic Concepts Printing
Grays Harbor Paper
Great River Organic Milling
HostPapa
Intelligent Nutrients
iStoreGreen
J.S. McCarthy Printers
K-1 Packaging Group
Laddawn, Inc.
Lundberg Family Farms
Marian Heath
Millipore Corporation
Mohawk Fine Papers, Inc.
Monadnock Paper Mills, Inc.
Neenah Paper, Inc.
New Leaf Paper
New Resource Bank
Nicholas Earth Printing
Office Depot
Original Impressions
Padgett Printing
Portland Fashion Week
Posty Cards
Sappi Fine Paper NA
Santa Cruz Organic
SC Johnson
Solberg Manufacturing
Strathmore Artist
Sustainable Sourcing, LLC
Tom Arma Studios, Inc.
Town School for Boys
Unboundary
Villanti & Sons Printers, Inc.
Wildcat Glades Conservation & Audubon Center
XelaPack

2010 Green-e Energy Electric Service Providers

Ambit Energy, LP
ConEdison Solutions (ConEd)
Consumers Energy Company
Direct Energy
DTE Energy
Hudson Energy Services
NSTAR Electric Company
Pepco Energy Services
Powerex Corp
TXU Energy
Viridian Energy, Inc.

2010 Green-e Energy Utility Green Pricing Program Participants*

Alliant Energy
Ameren Missouri
Arizona Public Service (APS)
Austin Energy
City of Palo Alto Utilities
Dominion Virginia Power
Eugene Water and Electric Board
Georgia Power
Green Power EMC
Indianapolis Power & Light Company (AEP)
LG&E and KU Energy
PacifiCorp - Pacific Power / Rocky Mountain Power
Platte River Power Authority
Puget Sound Energy (PSE)
Sacramento Municipal Utility District (SMUD)
Salt River Project
Santee Cooper
Sawnee EMC
Seattle City Light
Silicon Valley Power - City of Santa Clara
Tennessee Valley Authority (TVA)
We Energies
WPPI Energy
Xcel Energy (CO, MN, NM)

**Distribution companies not listed individually*

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