
CRS center for resource solutions

# 2009 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 the nation'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®

# 2009 HIGHLIGHTS

Total retail sales of Green-e Energy Certified renewable energy **exceeded 18 million MWh, an increase of 43% from 2008**.

**Over 545,000 residential customers and more than 37,000 commercial customers** across the U.S. and Canada purchased Green-e Energy Certified renewable energy, increases of 9% and 85%, respectively.

Green-e Energy Certified retail products avoided **over 9.4 million metric tons of $CO_2$ emissions** that would have been produced by an equivalent amount of average system power.[1]

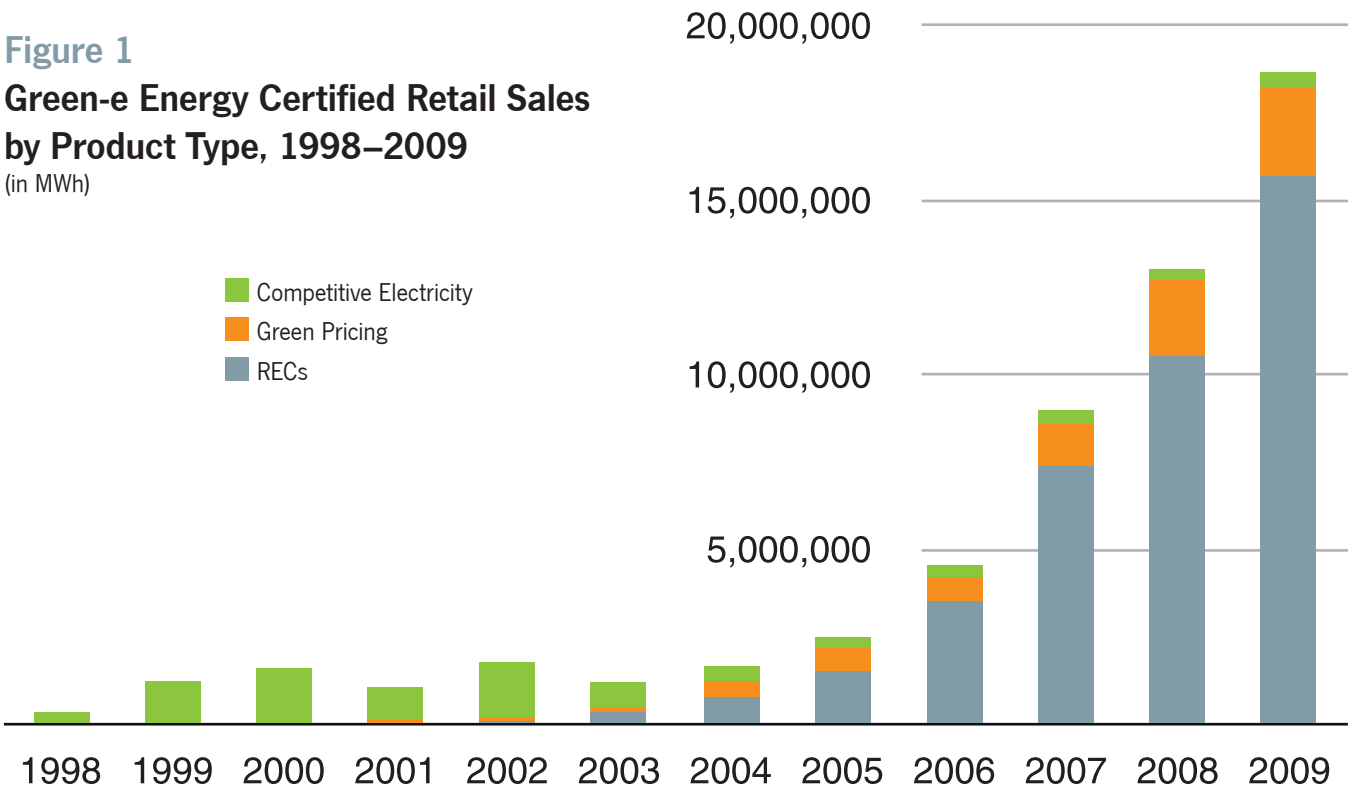
Renewable energy purchases and onsite generation by Green-e Marketplace participants totaled over **402,000 MWh**.

Sales of Green-e Climate Certified carbon offsets in 2009 resulted in **over 176,000 metric tons $CO_2$-equivalent reduced, a nearly 30% increase from 2008**.

**Figure 1**

**Green-e Energy Certified Retail Sales by Product Type, 1998–2009**

(in MWh)



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## Green-e Climate

Now in its second year, Green-e Climate took root in 2008 as retail consumers and offset providers alike began to learn more about and recognize the value of offset certification. Green-e Climate is a certification and consumer protection program for retail greenhouse gas (GHG) emissions reduction products (carbon offsets), the only program of its kind in the international voluntary carbon market. It launched in February 2008 in order to ensure that what is sold in the voluntary carbon market is legitimate, so that consumers may have confidence in their offset purchases, thus strengthening the market for continued growth.

Green-e Climate is the only program whose certification covers the entire chain of custody up to the point of sale. It requires not only verification of supply but verification of sales as well, in order to protect against double selling. It sets the standard for which of the project standards and protocols are most robust, limits supply to only these endorsed project certification programs, requires verification of ownership and sales, and ensures full disclosure and accurate offset information 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. They also must source only from projects that have been certified by an Endorsed Program's eligible protocols and project types. The Endorsed Programs for 2009 included the Clean Development Mechanism (CDM), the Gold Standard, the Voluntary Carbon Standard (VCS), and the Green-e Climate Protocol for Renewable Energy.

### Summary

Green-e Climate's representation in the market grew in its second year. Despite a dipping over-the-counter (OTC) market for voluntary emissions reductions, sales of Green-e Climate certified offsets grew substantially in 2009. Amidst global economic recession and growing uncertainty regarding U.S. and international climate policy, the broader OTC carbon market dropped by 12% in terms of transaction volume in 2009 from 2008 levels.[2] Nevertheless, Green-e Climate certified sales grew by nearly 30% in 2009 to total 176,113 unique metric tons carbon dioxide-equivalent (tCO2e). Ten participating offset providers offered a total of 16 certified offset products and sourced from 23 different projects located in the U.S., Brazil, and China. Projects utilized in 2009 were renewable energy or methane capture projects certified by VCS or approved under the Green-e Climate Protocol for Renewable Energy.

Green-e Climate's marked growth, especially within the context of the beleaguered 2009 market, is indicative of the value that offset buyers and sellers are placing on third-party certification. Demand for certified offsets was clearly decoupled from demand for all offsets in 2009, indicating a clear advantage in the market for sellers with a Green-e Climate certified product.

### Voluntary Carbon Standard

The Voluntary Carbon Standard (VCS) is a global standard for voluntary GHG emission reduction and removal projects and their validation and verification, and the standard was one of Green-e Climate's first Endorsed Programs.

In 2009, VCS projects represented a larger proportion of the supply used for Green-e Climate Certified offsets, growing nearly ninefold from 2008. Green-e Climate Certified offsets were sourced from multiple VCS projects located in the U.S., Brazil, and China. VCS project types for Green-e Climate Certified offsets included renewable energy, agricultural methane capture and destruction, landfill gas methane destruction, and coal mine methane capture and reutilization. Methane capture and/or destruction accounted for over 80% of VCS-derived certified sales in 2009.

### Green-e Climate Protocol for Renewable Energy

The Green-e Climate Protocol for Renewable Energy brings credibility to the market for GHG emission reductions derived from renewable energy projects in the United States. It establishes the eligibility requirements for certification of offsets from grid-connected renewable electricity projects, including the methodologies used to assess additionality and calculate the emission reductions, and other requirements related to tracking, prevention of double counting and double claiming, and verification.

In 2009, solar and wind projects approved under the Green-e Climate Protocol for Renewable Energy supplied the majority of certified tons sold, and eight more facilities received approval.

## Customer Breakdown

In 2009, commercial customers once again drove the market with their purchases accounting for 97% of total sales. Customers in the Western U.S. accounted for a majority of both residential and nonresidential purchasers, with a strong showing in the Northeastern and Southern U.S. as well. Sales to international customers increased nearly sevenfold from 2008 sales.

# Green-e Energy

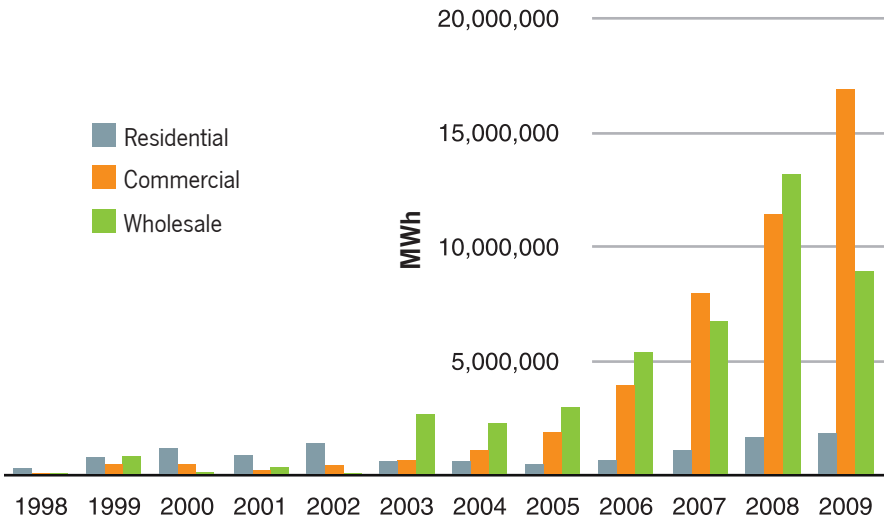
Green-e Energy is the leading certification program for voluntary renewable energy products in the U.S. On behalf of consumers buying renewable energy products certified by Green-e Energy, the program requires that certified Renewable Energy Certificate (REC) products, utility green pricing programs, 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 13 years. When Green-e Energy began in 1997, it was the first certification program of its kind, and it has remained one of the most respected renewable energy certification programs in North America.

This report presents the market activity of Green-e Energy Certified products during 2009. The information presented includes aggregate data from all Green-e Energy program participants, highlighting sales figures, customer types, and product resource mix both for 2009 and previous years.

**Green-e Climate Certified Sales, 2008–2009 (sales rounded)**

| | 2009 | 2008 |
|---|---|---|
| Unique Total Certified Sales (metric tons CO2e) | 176,000 | 136,000 |
| Total Certified Sales (metric tons CO2e) | 176,000 | 151,000 |
| Number of Certified Offset Products | 16 | 14 |
| Number of Program Participants | 10 | 8 |
| Number of Projects | 23 | 18 |

Figure 2 **Green-e Energy Certified Sales by Customer Type, 1998–2009**




## Summary

Total Green-e Energy Certified retail transactions to customers using renewable energy reached an all time high of 18 million megawatt-hours (MWh), a 43% increase from 2008, and representing 62% of all retail sales in the voluntary market in 2009.[3]

The total volume of all Green-e Energy Certified transactions in 2009 reached 27 million MWh, a 5% increase from the 2008 total. This total represents transactions of all types, including both certified retail and wholesale transactions.

Green-e Energy Certified wholesale transactions exceeded 8.9 million MWh in 2009. Of these certified wholesale transactions, 5.7 million MWh were resold in Green-e Energy Certified retail transactions. The remaining 3.2 million MWh were sold in non-Green-e Energy Certified transactions to utilities and electric service providers, power marketers, retail customers, and other buyers in the voluntary market.[4]

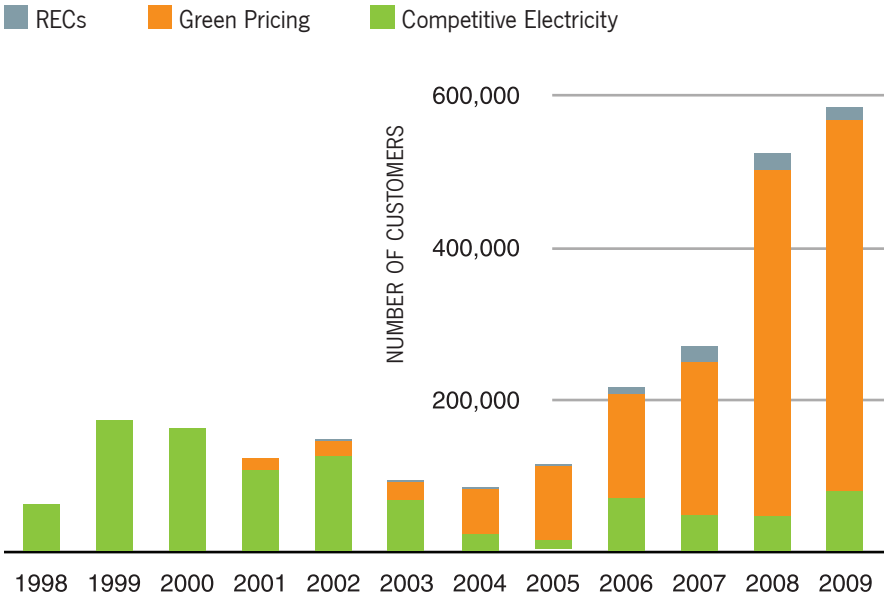
Removing the instances of renewable energy certified by Green-e Energy at both the wholesale and retail levels, Green-e Energy certified over 21.8 million unique MWh in 2009. This is an increase of 26% from 2008. Assuming that all MWh certified at the wholesale level were ultimately sold in retail voluntary market sales, 73% of the total MWh sold in the retail voluntary market in 2009 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 climate change, energy security issues, and sustainable economic development

**2009 Green-e Climate Participants**

3Degrees
Balanced Footprint
Bonneville Environmental Foundation
Community Energy
The CarbonNeutral Company
Conservation Services Group
Hess
Luminant
NextEra
Sterling Planet

Figure 3 **Retail Customers Purchasing Green-e Energy by Product Type, 1998–2009**




rises, the demand for renewable energy has increased greatly. In fact, voluntary renewable energy sales in the U.S. have increased an average of 37% each year since 2005.[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 megawatt-hour (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.

In 2009, retail REC sales grew to over 15.6 million MWh, a 49% increase from 2008. Wholesale REC sales dropped to 8.8 million MWh, a decrease of 32% over the same period. Green pricing sales grew by 18% to over 2.5 million MWh. Retail competitive electricity retail sales rose to 411,000 MWh, an increase of 21% from 2008, while wholesale competitive electricity sales decreased by 65% to 85,000 MWh.

Figure 1 illustrates the growth in sales of each retail product type from 1998 to 2009. During this period, renewable energy sales grew considerably, with RECs accounting for the largest amount of MWh sold. Green pricing programs have experienced steady growth, while competitive electricity product sales have fluctuated in recent years.

2009 saw a tremendous increase in the amount of renewable energy customers are purchasing. Of the 18 million MWh of certified retail sales, residential sales made up nearly 10% with commercial sales[8] comprising the remaining 90%. In 2009, residential sales grew by 11% and commercial sales grew by 48% on a MWh basis compared to 2008. Wholesale volumes decreased by 32% from 2008. Figure 2 (p. 2) charts sales growth over the past ten years by type of customer.

Table 1 (p. 3) lists 2009 sales by customer type and product type purchased. Noteworthy trends include commercial REC sales growth of 49% and commercial green pricing sales growth of 33% over 2008 levels. Additionally, residential sales of competitive electricity products grew by 31% over 2008 numbers.

Figure 3 (p. 3) illustrates the number of customers buying each type of retail renewable energy product over the years. Green pricing customers continue to constitute the vast majority of the overall number of purchasers. While the number of REC customers decreased by 22%, competitive electricity customers grew by 68%, and the number of green pricing customers increased by 8%. Overall, across the different types of retail products, the number of customers grew 11% in 2009.

Additionally, the overall number of companies participating in Green-e Energy grew in 2009. 68 REC marketers and brokers participated in 2009, down from 69 in 2008. At the same time, 219 green pricing utilities and their distribu-

Table 1 **Total Green-e Energy Certified Sales of Renewable Energy by Product Type and Customer Type, 2009 (MWh, rounded)**

| | Retail | | |
|---|---|---|---|
| | **Residential** | **Commercial** | **Wholesale** |
| RECs | 40,000 | 15,653,000 | 8,836,000 |
| Green Pricing | 1,552,000 | 1,003,000 | 0 |
| Competitive Electricity | 224,000 | 188,000 | 85,000 |
| Total Sales | 1,816,000 | 16,844,000 | 8,920,000 |

**Total Retail:** 18,659,000 MWh
**Total Unique Certified:** 21,854,000 MWh
**Total Certified Transactions:** 27,580,000 MWh

tors participated, up from 202 in 2008. The number of competitive electricity providers decreased from 13 to 10.

The number of states in which electricity users have access to a Green-e Energy Certified electricity products (both green pricing and competitive electricity) slightly declined from 30 states in 2008 to 28 states in 2009. Figure 4 (p. 4) shows a map highlighting these states. Table 2 (p. 4) lists the states with largest purchase volume, Table 3 (p. 4) lists the top ten states by number of customers, and Table 4 (p. 5) lists the top ten states by contribution of renewable energy generation used in Green-e Energy Certified retail sales in 2009. 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 (p. 7) demonstrates the breakdown of resource mix delivered in certified retail products in 2009. The most significant change from 2009 is that renewable energy derived from biomass dropped from 19% to 10%, and wind increased from 68% to 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 number of MWh sold in retail Green-e Energy Certified sales in 2009, an equivalent amount of average system power would have produced emissions to the atmosphere of over 9.4 million metric tons of $CO_2$, the leading greenhouse gas contributing to global climate change; 5,100 metric tons of $SO_2$, a cause of acid rain; 4,800 metric tons of $NO_x$, which causes smog and ground-level pollution; and over 72 lbs of mercury, a toxic substance linked to harmful neurological health effects.[9]

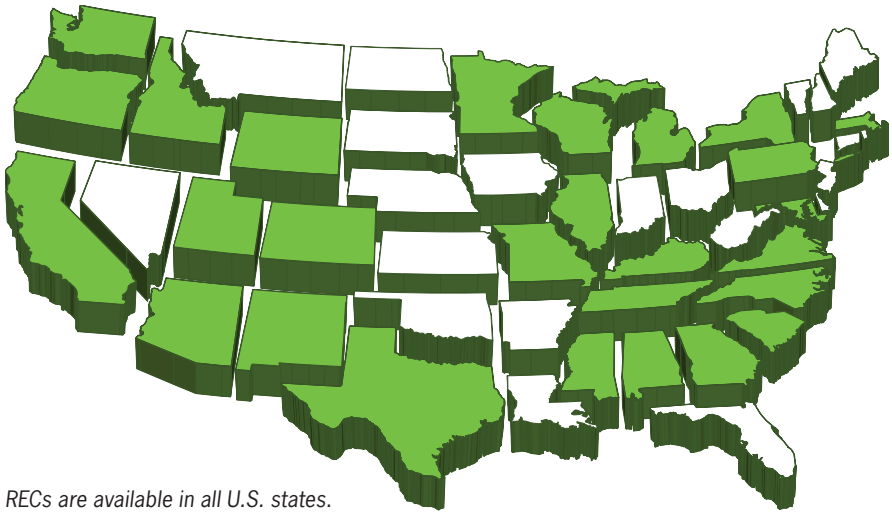
**Table 2 Top Ten States Purchasing Retail Green-e Energy Certified Renewable Energy by Percent of Total Retail Sales (MWh), 2009**

| | |
|---|---|
| MD | 13% |
| TX | 10% |
| CA | 9% |
| NY | 8% |
| AZ | 8% |
| PA | 7% |
| MN | 5% |
| IL | 5% |
| CO | 5% |
| WA | 4% |

**Table 3 Top Ten States by Highest Number of Retail Customers, 2009**

| | |
|---|---|
| TN | 26% |
| CA | 11% |
| CO | 8% |
| OR | 7% |
| WA | 6% |
| WI | 6% |
| MI | 5% |
| NY | 5% |
| UT | 5% |
| MN | 4% |

**Figure 4 States With Green-e Energy Certified Renewable Electricity Options, 2009**



*RECs are available in all U.S. states.*

## 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 2009. 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 no renewable energy is 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 renewable energy certificates (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

**Green-e Governance Board**

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 and amends them as necessary so that they remain consistent with changing circumstances and evolve with market conditions.

count towards a state's renewable-energy mandate.

In 2009, eight new REC marketers joined the program while eight voluntarily terminated participation.

Table 5 (p. 5) lists the total number of REC marketers and the number of certified products they offered in 2009, with historical reference going back to 2002.

Table 6 (p. 6) summarizes Green-e Energy Certified REC sales in 2009. The number of MWh sold to retail customers rose 49% and purchases by commercial customers rose 49% in 2009, which speaks to the growing importance renewable energy holds with commercial enterprises. At the same time residential REC sales volume declined 20%. Green-e Energy Certified wholesale REC transactions decreased 32% from 2008 levels. This decline does not necessarily indicate that overall wholesale transactions decreased, but does mean that fewer were certified by Green-e Energy.

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 2009, a total of 8.8 million MWh was certified at the wholesale level; of this 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 2009 can be calculated. The unique number of RECs sold in 2009 in certified transactions at either the retail or wholesale level exceeded 18.8 million MWh, a 23% increase from 2008.

Figure 6 (p. 8) displays the resource types supplying certified retail REC sales in 2009. One of the noteworthy changes in REC resource type is wind's contribution grew to 79% of the total from last year's contribution of 66%. Concurrently, the total number of MWh from biomass decreased, and the contribution of biomass to REC sales dropped to 10% from 21% in 2008.

## Utility Green Pricing Programs

Green-e Energy Certified utility green pricing programs offer their 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 (RPS).

Table 7 (p. 6) presents the number of utilities offering certified green pricing programs since 2001. In 2009, two new utilities joined and one voluntarily left the program. 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 decreased from 24 to 21.

Table 8 (p. 6) summarizes certified green pricing sales in 2009 and the change from 2008 sales by customer types. Overall, certified green pricing sales increased by 18% in 2009.

In 2009, the number of customers participating in Green-e Energy Certified green pricing programs increased 8%.

The National Renewable Energy Laboratory (NREL) 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 2009 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:** PacifiCorp, SMUD, Xcel Energy, Puget Sound Energy, We Energies

Figure 7 (p. 9) illustrates the resource mix used to supply Green-e Energy Certified green pricing programs in 2009. The shares for each resource type are similar to 2008 contributions. Biomass decreased its share of the total from 13% to 10%, although the total number of MWh from biomass only slightly decreased. Landfill gas/digester increased from 8% to 11% of the total.

**Table 4 Top Ten States Supplying Renewable Energy to Green-e Energy Certified Retail Sales by Percent of Total MWh, 2009**

| | |
|---|---|
| IA | 22% |
| TX | 18% |
| KS | 8% |
| ND | 8% |
| TN | 6% |
| WA | 5% |
| OK | 4% |
| MN | 3% |
| LA | 3% |
| OR | 3% |

**Table 5 Marketers Offering Green-e Energy Certified RECs, 2002–2009**

| 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** |

**Table 6 Green-e Energy Certified Sales of RECs by Customer Type, 2009**

| | 2009 Sales (MWh, rounded) | Percent Change From 2008 | Percent of Total REC Sales | Customers | Average Renewables Purchase Size (MWh) |
|---|---|---|---|---|---|
| Residential | 34,000 | -20% | 0.3% | 12,210 | 3 |
| Commercial | 15,653,000 | 49% | 99.7% | 4,220 | 3,710 |
| **Total Retail** | **15,693,000** | **49%** | **100%** | **16,430** | |
| Wholesale | 8,836,000 | -32%% | | 100 | 85,790 |

## Competitive Electricity Products

In deregulated electricity markets electric service providers (ESPs) offer Green-e Energy Certified renewable electricity products. Table 9 (p. 7) lists historical participation by ESPs in Green-e Energy. In 2009, the number of participants decreased from 13 to 10, while the number of products offered dropped from 20 to 13. These products were offered in 8 states.

Residential competitive electricity sales increased by 31% in 2009, and commercial sales increased by 11%. The number of commercial customers dramatically increased from under 300 in 2008 to over 14,800 in 2009. This could potentially be attributed to more small businesses signing up for competitive electricity products. The number of residential customers purchasing a competitive electricity product increased 38%. Table 10 (p. 8) breaks down competitive electricity sales by customer type, average purchase size, and change from 2008 sales.

Wholesale transactions of competitive electricity dropped a significant 65% compared to 2008. 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 440,700, a 24% increase from 2008.

Figure 8 (p. 9) illustrates the resource types used to supply certified retail competitive electricity products in 2009. Similar to 2008, the mix in 2009 was entirely made up of wind and biomass. Wind increased its share to 94%, and biomass dropped from a 17% share in 2008 to 6% in 2009.

**Table 7 Utilities Offering Green-e Energy Certified Green Pricing Programs, 2001–2009**

| 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** |

## Conclusions

The volume of sales and number of customers of Green-e Energy Certified renewable energy reached all time highs in 2009. Commercial purchasers as a whole bought 49% more RECs and 33% more electricity in green pricing programs than in 2008. Residential customers purchased 10% more from their green pricing programs and 31% more in competitive electricity products. These increases more than compensated for the decline in wholesale product sales. In addition, the number of commercial and residential customers increased by 85% and 9% respectively. Despite the down economy, commercial purchases of renewable energy continue to thrive and grow.

**Table 8 Green-e Energy Certified Sales in Green Pricing Programs by Customer Type, 2009**

| | 2009 Sales (in MWh, rounded) | Percent Change from 2008 | Percent of Total Green Pricing Sales | Customers | Average Renewables Purchase Size (MWh) |
|---|---|---|---|---|---|
| Residential | 1,552,000 | 10% | 61% | 469,450 | 3 |
| Commercial | 1,003,000 | 33% | 39% | 18,400 | 54 |
| **Total** | **2,555,000** | **18%** | **100%** | **487,850** | |

**Table 9 ESPs Offering Green-e Energy Certified Electricity Products, 1998–2009**

| 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** |

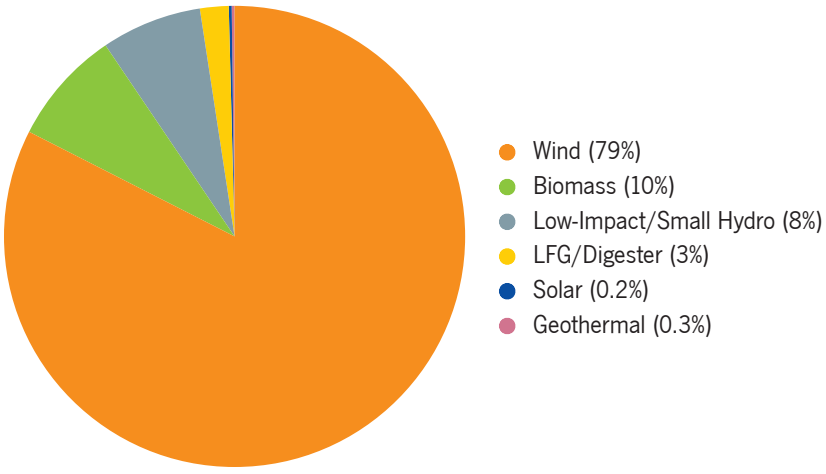
Evident from the impressive growth of the program is that the voluntary renewable energy market is reaching an increasingly large number of customers who clearly value purchasing renewable energy that is Green-e Energy Certified.

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 49% of MWh being sold into compliance and voluntary markets.[13] As the past 13 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 2009, Green-e Marketplace continued to expand the total number of products carrying the Green-e logo as well as its

**Figure 5 Contributions of Renewable Resource Types to Total Green-e Energy Certified Retail Sales, 2009**




### 2009 Green-e Energy Participating REC Marketers and Brokers

3Degrees
3 Phases Renewables
Ameren Energy Marketing
American Municipal Power, Inc
Arizona Public Service
BlueStar Energy Services
Bonneville Environmental Foundation
Carbonfund.org
Carbon Solutions Group
Choose Renewables
Clean Currents, LLC
Clear Sky Power
Community Energy, Inc.
Community Green Energy, LLC
ConEdison Solutions
Constellation NewEnergy
Consumers Energy Company
Direct Energy
Duke Energy
EcoElectrons Renewable Energy
Element Markets, LLC
Empire District Electric
Energy Plus Holdings LLC
Entark Global, Ltd.
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.
Intermountain REA
Kansas City Power and Light Greater Missouri Operations
Luminant Energy Company, LLC
NativeEnergy
New York Power Authority
Nexant Clean Energy Markets
NextEra Energy Resources, LLC
Powerex Corp
Puget Sound Energy
Reliant Energy
Renewable Choice Energy
Sacramento Municipal Utility District
Santee Cooper
Shell Energy North America (formerly Coral Energy Holding, LP)
Silicon Valley Power - City of Santa Clara
Sky Energy
Sterling Planet, Inc.
Suez Energy Resource NA, Inc.
SunPower Corporation
Sustainable Power Corporation / USSEC
TerraPass
The CarbonNeutral Company
TransAlta
Viking Wind Partners, LLC
Village Green Energy
Wabash Valley Power Association
Washington Gas Energy Services
WindCurrent
WindStreet Energy
Xcel Energy

Table 10 **Green-e Energy Certified Sales of Electricity by ESPs by Customer Type, 2009**

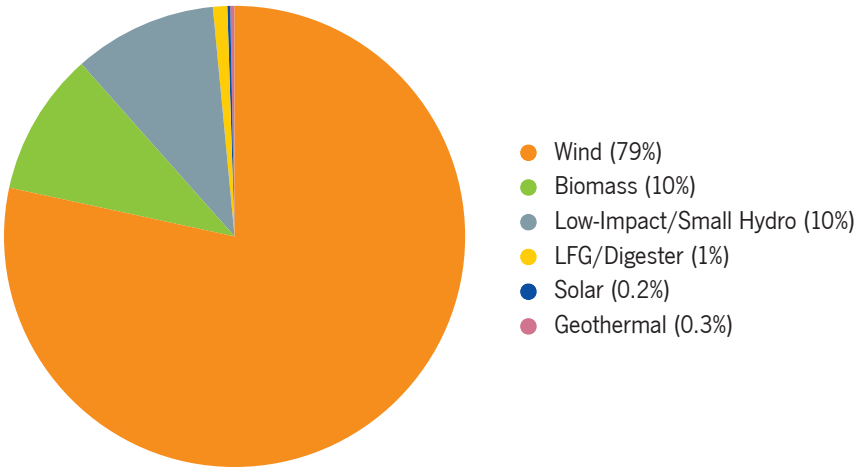
| | 2009 Renewables Sales (MWh, rounded) | Percent Change from 2008 | Percent of Total Competitive Electricity Sales | Customers | Average Renewables Purchase Size (MWh) |
|---|---|---|---|---|---|
| Residential | 224,000 | 31% | 54% | 64,220 | 3 |
| Commercial | 188,000 | 11% | 46% | 14,830 | 13 |
| **Total Retail** | **411,000** | **21%** | **100%** | **79,050** | |
| Wholesale | 85,000 | -65% | | 2 | 42,290 |

overall program offerings. As a result of over 400 products achieving certification through the Green-e Marketplace program and displaying the Green-e logo, national recognition of the mark remains high. A study published in 2009 by the market research firm BBMG placed the Green-e logo as the most recognized non-profit certification mark at 21% nationally.[14]

Green-e Marketplace increased the diversity of its program by introducing a number of new program features. A new series of educational webinars was initiated and provided insight into relevant topics such as renewable energy policy, business cases for green power, and consumer perceptions toward climate change. In addition to its annual participant survey, Green-e Marketplace staff teamed with Natural Marketing Institute to co-author the study *Unlocking the Power of Renewable Energy Certification to Build Credibility with Consumers*. Green-e Marketplace also formed an outside advisory council and membership subgroups to help increase program feedback and participant involvement in program development.

Overall, 57 organizations participated in Green-e Marketplace over the course of 2009. Renewable energy purchases and onsite generation in 2009 by Green-e Marketplace participants totaled 402,141 MWh. 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-four percent of Green-e Marketplace participants met their commitment needs through RECs, with 11% enrolled in utility green pricing programs, and 9% used onsite renewable energy generation that met the *Green-e Energy National Standard*. ●

Figure 6 **Contributions of Renewable Resource Types Sold in Retail Green-e Energy Certified REC Products, 2009**




**2009 Green-e Energy Electric Service Providers**

Ambit Energy, LP
ConEdison Solutions
Consumers Energy Company
Direct Energy
DTE Energy
Hudson Energy Services
NSTAR Electric Company
Powerex Corp
Reliant Energy
TXU Energy

**2009 Green-e Energy Utility Green Pricing Program Participants***

Alliant Energy
AmerenUE
Arizona Public Service (APS)
City of Palo Alto Utilities
Dominion Virginia Power
E.ON U.S.
Eugene Water and Electric Board
Georgia Power
Green Power EMC
PacifiCorp–Pacific Power/
Rocky Mountain Power
Platte River Power Authority
Puget Sound Energy
Roseville Electric
Sacramento Municipal Utility District
Salt River Project
Santee Cooper
Sawnee EMC
Seattle City Light
Silicon Valley Power–City of Santa Clara
Tennessee Valley Authority
We Energies
WPPI Energy
Xcel Energy (CO, MN, NM)

**Distribution companies not listed individually*

# NOTES

1. Number based on the lowest 2005 NERC Region non-baseload output emission rates as published by the EPA, eGRIDweb version 1.0, http://www.epa.gov/cleanenergy/energy-resources/egrid/index.html, as described in the Green-e Energy Code of Conduct and Customer Disclosure Requirements.
2. Hamilton, K. et al. June 14, 2010. *Building Bridges: State of the Voluntary Carbon Markets 2010.* Ecosystem Marketplace, Bloomberg New Energy Finance. Pp. ii and 17.
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. "Commercial" includes all sales to non-residential consumers, including commercial, industrial, institutional, and government purchasing.
9. Number based on the lowest 2005 NERC Region non-baseload output emission rates as published by the EPA, eGRIDweb version 1.0, www.epa.gov/cleanenergy/energy-resources/egrid/index.html, 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 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 and are less than 5 MW or for facilities above 5 MWh, Low-Impact Hydro certification is also required. 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.

### 2009 Green-e Marketplace Participants

Action Envelope
Americraft
Aromafloria
Avatar New York
AVEDA
Batdorf and Bronson Coffee Roasters
Beaulieu Commercial
Becton Dickinson Infusion Therapy Systems, Inc. (BD)
BurstNET Technologies
BuyWell International, Inc.
Carolina Plantation Rice
Cascades Tissue Group, Sales Inc.
Choice Organic Teas
Codero
Corporate Sustainability Summit
CTI Paper Group, Inc.
Curtis Packaging Corporation
DMI Industries, Inc.
Garden of Life
Graphic Concepts Printing
Grays Harbor Paper
Great River Organic Milling
Green Zebra
Hostpapa
Intel Corporation
Intelligent Nutrients
iStoreGreen
J.S. McCarthy Printers
K-1 Packaging Group
KFM Foods International
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
Padgett Printing
PepsiCo, Inc.
Philadelphia Phillies
Pizza Fusion
Posty Cards
San Jose Earthquakes
Sappi Fine Paper North America
SC Johnson & Son
Smucker Natural Foods, Inc.
Solberg Manufacturing
Strathmore Artist
Sustainable Sourcing, LLC.
Tom Arma Studios, Inc.
True Textiles
Unboundary
Villanti and Sons Printers, Inc.
Wildcat Glades Conservation & Audubon Center

**Figure 7 Contributions of Renewable Resource Types Sold in Green-e Energy Certified Green Pricing Programs, 2009**

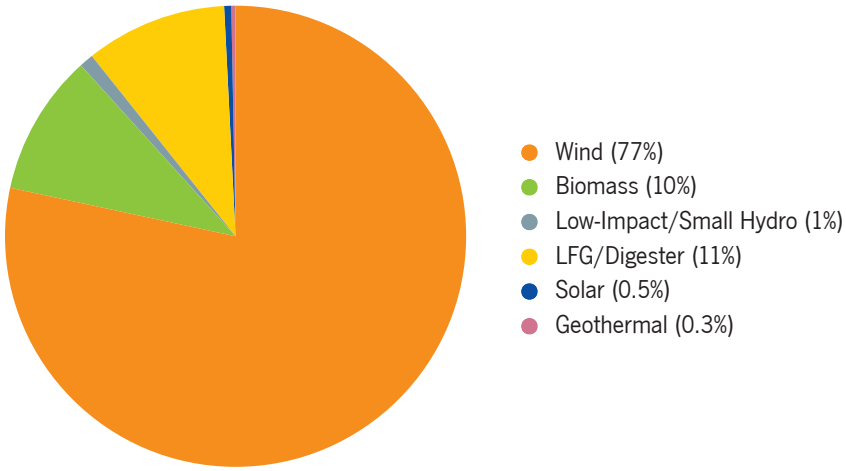
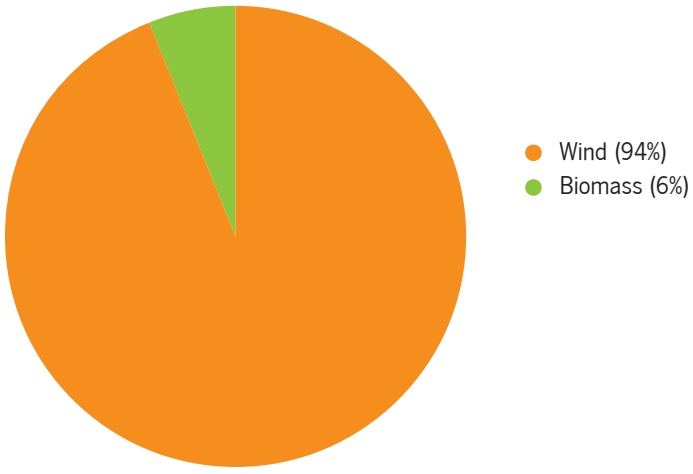



**Figure 8 Contributions of Renewable Resource Types Sold in Green-e Energy Certified Competitive Electricity Products, 2009**

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