

Building consumer confidence in renewable electricity

Green-e Verification Results



Year 2000

*A report of the results of an annual independent process audit of
Electricity Service Providers offering Green-e certified products.*

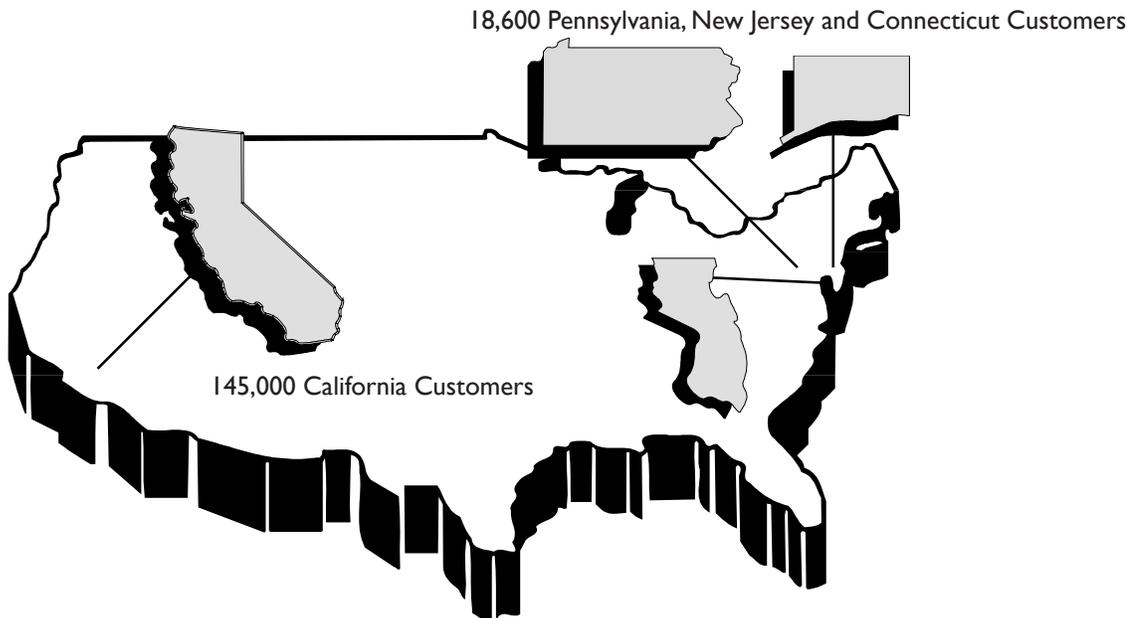
Introduction

Electricity that is certified by the Green-e Program must meet environmental and consumer protection standards that are established through the Green-e advisory process and the non-profit Center for Resource Solutions. Electricity Service Providers (ESPs) who sell certified electricity undergo an annual independent process audit to verify that they meet Green-e standards. This document presents the results of the Green-e process audit for 2000. In addition to the audit, Green-e also performs a biannual review of ESPs' marketing materials to make sure that they conform to Green-e's Code of Conduct.

Green-e Providers

In 2000, Green-e certified products were sold in California, Pennsylvania, New Jersey, and Connecticut. Nationwide, 4 wholesalers and 13 retailers participated in the Green-e Program. In total, 27 separate Green-e certified retail products were offered across the country. Twenty-one of the products were offered as 100% renewable, one as 75% renewable, and five as 50% renewable.

Green-e Customers



Residential Consumers

Nationwide, over 163,000 electricity customers chose Green-e certified products. The overwhelming majority of these customers were residential accounts. In California, over 136,000 residential accounts were served Green-e certified electricity in 2000. In Pennsylvania, New Jersey, and Connecticut, over 18,000 residential accounts were served by Green-e certified electricity in 2000.

Commercial Consumers

There were approximately 8,100 non-residential (industrial, small and large commercial and agricultural) California accounts served by Green-e certified power. In Pennsylvania, New Jersey, and Connecticut, there were 445 commercial accounts. Of the total load served by Green-e electricity products in 2000, 71% was attributable to residential customers and 29% to non-residential customers. Green-e *wholesale* suppliers sold over 118,000 MWh of renewable power into the competitive market during 2000. Over 90% of this wholesale energy was used to supply Green-e retailers.

A comparison of California Public Utility Commission data (DASR reports) shows that at the end of 2000, 84% of the residential customers who switched ESPs switched to a Green-e certified product. For non-residential customers, 25% of those that switched suppliers switched to a Green-e certified retailer. However, in the PJM region, according to the data from the Pennsylvania Office of Consumer Advocates and the New Jersey Board of Public Utilities, the switch to Green-e certified electricity represented only 3% of all switches to an alternative supplier, almost all of which were residential customers. This drastic difference in percentages could be due to the California Customer Credit Subaccount, which enabled ESPs to offer renewable electricity at a discounted price.

Types of Renewables

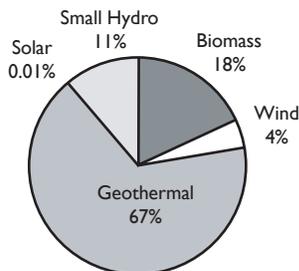
Of energy bought on behalf of Green-e certified products in 2000, 98% of that energy was generated from eligible renewable resources, amounting to nearly 1.6 million MWh of renewable generation. The mix of resources sold as Green-e certified products varied by region. In all regions, the renewable energy content exceeded Green-e's minimum requirements.

**National 2000 Resource Mix-
Electricity Supplied for Green-e Certified Products¹**

Resource	MWh Supplied (thousands)	%of Total Electricity Supplied
Eligible Renewable Resources	1,584	98.5%
Biomass	374	23.3%
Geothermal	972	60.4%
Wind	56	3.5%
Small Hydro	183	11.4%
Solar	0.2	0.01%
Non-Renewable Resources	24	1.5%
Large Hydro	3.5	
Natural Gas	8	
System	12.5	

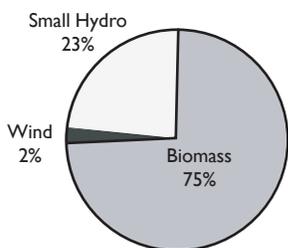
¹ Figures approximate due to rounding

California Energy Resources Purchased for Retail Green-e Products in 2000



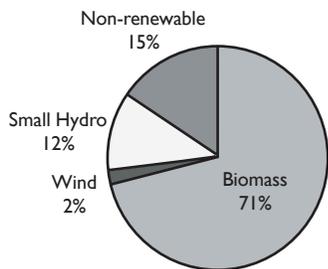
In California, all of the energy sold through Green-e certified products came from eligible renewable energy resources, even though four of the nineteen products offered in California were offered at levels lower than 100% renewable energy content.¹ For California products generally, 67% of the energy sold as Green-e was from geothermal facilities, 18% from biomass facilities, 11% from small hydro, 3.6% from wind, and less than 1% from solar.

Connecticut Energy Resources Purchased for Retail Green-e Products in 2000



In Connecticut, like California, 100% of the electricity sold in Green-e certified products came from eligible renewable generators. Overall, 75% of energy in products sold in Connecticut came from biomass, 23% from small hydro, and remainder from wind.

Pennsylvania and New Jersey Energy Resources Purchased for Retail Green-e Products in 2000



In Pennsylvania and New Jersey, 85% of the total energy sold under the Green-e logo came from eligible renewable generators. Overall, Green-e products in the Mid-Atlantic contained 71% biomass, 12% small hydro, and 2% wind energy.

In Pennsylvania, New Jersey and Connecticut combined, there were eight Green-e certified products sold in 2000. Five of these products claimed 100% renewable energy content, and three claimed 50% renewable energy content.

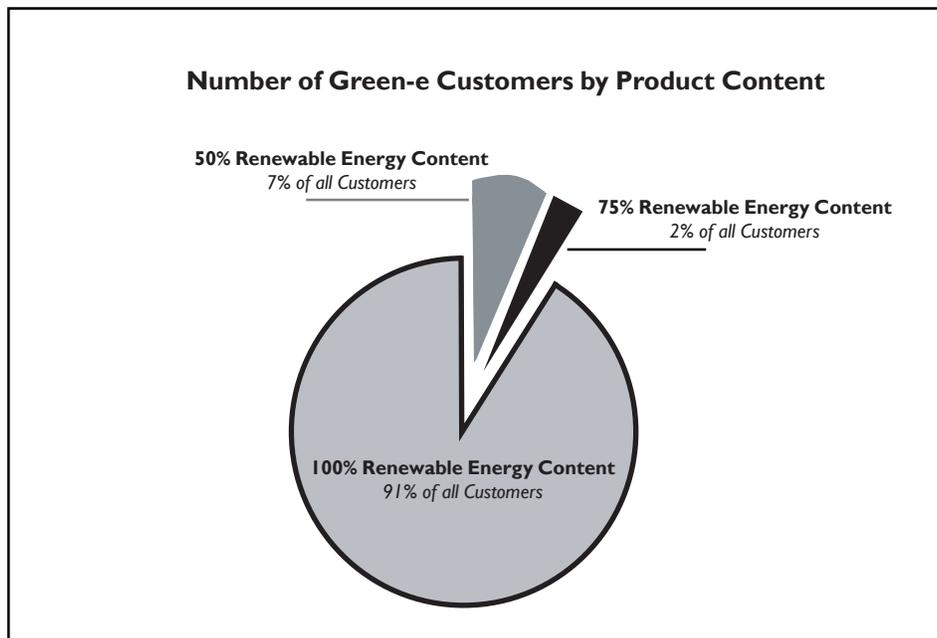
Renewable Content Mix

ESPs went beyond their commitment to customers in offering renewable power. Nation-wide, 93% of all of the Green-e products sold exceeded Green-e’s minimum requirements for renewable energy product content. These results show that ESPs have delivered more green power to the grid than promised – a benefit for consumers, renewable power producers and the environment. This finding follows the 1999 and 1998 Green-e Verification Results which also documented that Green-e certified products had met and

¹ In California, there were 15 products that claimed 100% renewable energy content, one that claimed 75% renewable energy content, and three that claimed 50% renewable energy content.

exceeded the program's environmental and consumer protection standards.

The chart below shows the percentage of customers that purchased 100% renewable products versus customers who chose products based on less than 100% renewables. Of the over 163,000 customers purchasing Green-e products in 2000, over 90% chose 100% renewable content products. In California, 96% of customers chose Green-e certified products with 100% renewable energy content, while in Pennsylvania, New Jersey and Connecticut, 50% of customers chose products with 100% renewable energy content and the remainder chose products with 50% renewable energy content.



The Green-e *new* renewable criterion requires that certified products contain a specified percentage of new renewable resources. In California, Pennsylvania and New Jersey, “new renewables” are generated from wind, solar, geothermal or biomass facilities that have come on line since 1997, and in Connecticut, since 1998. In the second year after states restructure their electricity market, Green-e requires 5% of the total product to be supplied from new renewable resources. In California and Pennsylvania, the 5% new renewable was required as of 2000. In New Jersey and Connecticut, the 5% standard took effect in 2001.

In California, 10 percent of the energy sold under the Green-e label was from new renewable resources. The new renewable resources used in California Green-e products were biomass (55%), wind (35%) and geothermal (10%). In Pennsylvania and New Jersey, 5.7% of total energy was supplied from new renewables – all from biomass facilities. And in Connecticut, 2% of the energy supplied was from new wind facilities.¹

Environmental Benefit

Nationwide, Green-e retail products sold in 2000 resulted in a pollution savings of approximately 486,970 tons of carbon dioxide (CO₂), 1,050 tons of sulfur dioxide (SO₂), and 660 tons of nitrogen oxides (NO_x)². These pollutants contributed to global warming, acid rain and smog, respectively.

Most of the carbon dioxide emissions savings came from Green-e sales in California, reflective of the fact that most of the energy sold under the Green-e label was sold in California. California retail customers accounted for nearly 408,400 tons of carbon dioxide savings. Sales of Green-e retail products in Pennsylvania, New Jersey, and Connecticut displaced approximately 78,600 tons of carbon dioxide.

Reductions in sulfur dioxide emissions were more evenly distributed across the country. California customers accounted for over 460 tons of SO₂ emissions reductions. With much higher regional emissions rates of SO₂, Pennsylvania, New Jersey and Connecticut accounted for 590 tons of SO₂ emissions offsets despite the fact that these three states combined represent only about 20% of the total Green-e MWh sold nationally.

Finally, reductions in NO_x emissions were highest in California – 470 tons. Pennsylvania, New Jersey and Connecticut together accounted for over 180 tons of reduced NO_x emissions.

Future Outlook

Although direct access in California was revoked in 2001, existing customers were allowed to stay with their competitive providers. Approximately 90,000 accounts in California are still being served Green-e certified electricity offered by Green Mountain Energy, Sacramento Municipal Utility District, Commonwealth Energy and Enron Energy Services. In addition, Green-e expects several new providers to offer certified products in Ohio, Texas and nationally on the internet through certification of products based on tradable renewable electricity certificates.

¹ Connecticut Green-e electricity also included 23% new small hydro, but small hydro is not an eligible *new* renewable resource under the Green-e standard.

² Emission reductions are the emissions associated with the system energy in each region that was displaced by the use of renewable energy by Green-e retail customers. Emissions factors for each region were adjusted for imports and exports in the region. All emissions data is from the EPA EGRID 2000 Version 2, release in September 2001, for year 1998.

Information Verified by Green-e Process Audit

The Green-e process audit is different from a traditional financial audit in that the auditor only reviews those materials and processes dictated by a set of Agreed-Upon Procedures. The auditor reviews a company's contracts, invoices and metering data to verify the quantity and type of renewable power purchased and sold. More specifically, the independent auditor annually verifies that the ESP has contracts and processes that support the following Green-e requirements:

- the ESP purchased enough renewable power from eligible resources, in quantity and type, to meet customer demand for each specific Green-e electricity offering or “product;”
- any non-renewable portion of the electricity product had emissions less than or equal to the regional system power mix for SO_x , NO_x and CO_2 ;
- the information in the Annual Power Content Label was accurately calculated and displayed (retail ESPs and power pools only);
- the renewable power purchased and sold by the ESP was not sold to more than one customer or subsidized through the rate base of regulated utilities;
- the ESP did not make any specific purchases of nuclear power for this product;
- the process for recording the amount of power sold to customers is accurate based on a statistical sampling of customer bills;
- as required by the Green-e standard, the ESP purchased sufficient quantities of new renewable resources; and
- in California, the Annual Retail Supplier Report forms filed with the California Energy Commission (CEC) are accurate and supported by contracts and/or invoices for power purchased and sold (applies to retail ESPs and power pools only).



For More Information

Green-e is the nation's only certification program for electricity offerings based on renewable energy supply. For more information about Green-e and to see these verification results on-line, please visit our website at www.green-e.org, call our toll free number or contact the Center for Resource Solutions.

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The Green-e Program is administered by the Center for Resource Solutions, a non-profit organization. CRS is dedicated to bringing together diverse interests to preserve our environment, encourage sustainable economic growth, and promote clean energy for present and future generations.