



CRS

center for  
resource  
solutions

CELEBRATING  20 YEARS / 1997-2017



Green-e<sup>®</sup>

# 2016 Green-e Verification Report

# ABOUT CENTER FOR RESOURCE SOLUTIONS

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Center for Resource Solutions (CRS) creates policy and market solutions to advance sustainable energy and mitigate climate change. CRS is a U.S.–based nonprofit with global impact. We develop expert responses to energy and climate change challenges with the speed and effectiveness necessary to provide real-time solutions. Our leadership through collaboration and environmental innovation builds policies and consumer-protection mechanisms in renewable energy, greenhouse gas reductions, and energy efficiency that foster healthy and sustained growth in national and international markets.

## ABOUT GREEN-E

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For 20 years CRS has developed and implemented consumer-protection standards for the voluntary renewable energy and carbon offset markets through the Green-e programs. These standards mandate a rigorous accountability for retail products sold to consumers, bringing a level of transparency that can bolster consumer confidence in the industry. Green-e has three programs:

**Green-e Energy** is North America’s leading voluntary certification program for renewable energy. Since 1997, Green-e Energy has certified renewable energy that meets environmental and consumer protection standards developed in conjunction with leading environmental, energy, and policy organizations. Green-e Energy requires that sellers of certified renewable energy disclose clear and useful information to potential customers, allowing consumers to make informed choices. For more information, see [www.green-e.org/energy](http://www.green-e.org/energy).

**Green-e Climate** is the global retail standard and certification for carbon offsets sold in the voluntary market. The program provides critical oversight and transparency in the retail market for greenhouse gas emission reductions (carbon offsets), from the project through to the end consumer. Green-e certifies that carbon offsets contain real, verified reductions from high-quality and additional projects, and is the only independent program that verifies sales, correct delivery, and exclusive retail ownership of reductions. Green-e also reviews marketing materials for accuracy and requires disclosure of important information in order to prevent deception and allow offset buyers to make an informed and impactful decision. For more information, see [www.green-e.org/climate](http://www.green-e.org/climate).

**Green-e Marketplace** certifies companies and products across a range of industries, from beverages to paper manufacturers to electric vehicles, and offers a range of services to communicate and promote clean renewable energy and carbon offsets for their operations and activities. For more information, see [www.green-e.org/marketplace](http://www.green-e.org/marketplace).

## GREEN-E CLIMATE SUMMARY

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As the global retail standard for carbon offset certification, Green-e Climate brings chain of custody oversight to the voluntary offset market. Green-e Climate provides critical retail protections and assurances for buyers, sellers, and project standards, including confidence in product marketing and overall quality. Sales in 2016 hit the highest certified sales volume in the history of the program, driven mainly by large commercial purchases. We've also seen growth in bundled sales, where sellers bundle certified carbon offsets with natural gas.

## GREEN-E ENERGY SUMMARY

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Green-e Energy certified retail sales reached over 48 million megawatt-hours (MWh) in 2016, the highest number of certified retail MWh to date. Green-e currently certifies over 1.3% of the total U.S. electricity mix,<sup>1</sup> or enough to power nearly a third of U.S. households for a month. More than half of the installed wind capacity in the U.S. is participating in Green-e Energy certified transactions,<sup>2</sup> and 2016 saw over 668,000 MWh come from solar generation, more than double that of 2015. In 2016 there were over 963,000 retail purchasers of Green-e certified renewable energy, including over 53,000 businesses. 2016 saw increases in sales and customers of certified utility green pricing products, REC products, and community choice aggregation products, resulting in all-time highs for each of those certification categories—more retail customers than ever before are purchasing Green-e Energy certified products.

## GREEN-E MARKETPLACE SUMMARY

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Green-e Marketplace recognizes organizations that use renewable energy or carbon offsets and enables them to demonstrate their environmental commitment and communicate with stakeholders through the use of the nationally recognized Green-e logo and additional promotional tools. Throughout the year, Green-e Marketplace focused on improving the program offering for current participants, while laying the groundwork for future growth. Participation in the program decreased modestly, but the program added its largest participant yet, Procter & Gamble. Overall, Marketplace participants purchased or generated over 647,000 MWh of renewable energy in 2016, a 27,000 MWh increase over the previous year.



# GREEN-E ENERGY

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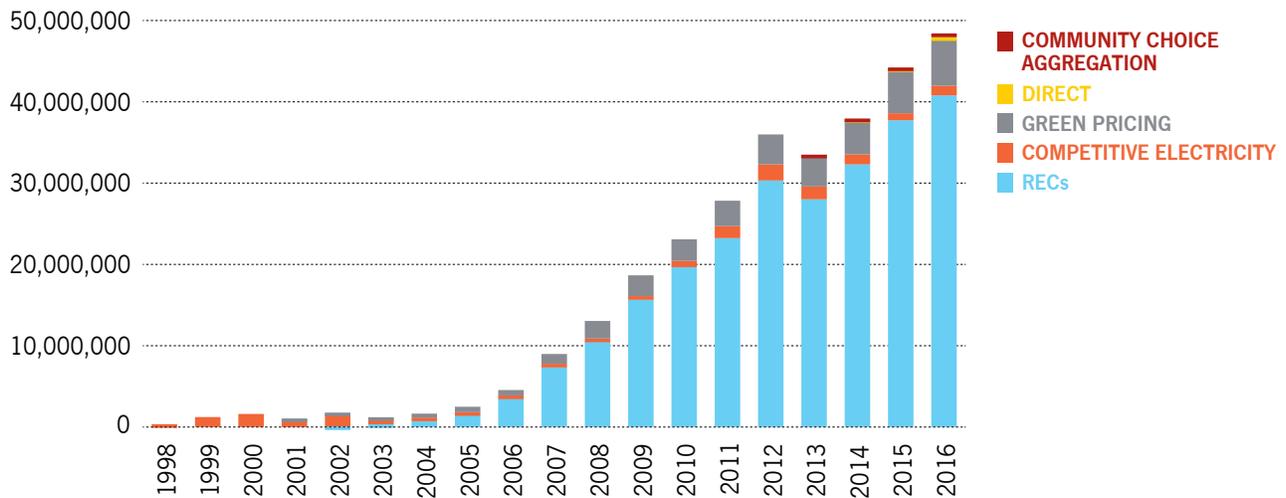
Green-e Energy is the leading certification program for voluntary renewable energy products in North America. Green-e Energy certified renewable energy products are sold in the following different types:

- **Green Pricing Programs.** Renewable electricity sold by electric utilities in regulated electricity markets, offered in addition to the renewable electricity included in standard electricity service.
- **Competitive Renewable Electricity.** Similar to a green pricing program, but sold by an electric service provider in a deregulated electricity market.
- **Renewable Energy Certificates (RECs).** A REC represents the non-electricity, renewable attributes of one MWh of renewable electricity generation, including all the environmental attributes, and is a tradable commodity that can be sold separately from the underlying electricity. RECs allow for a larger and more efficient national market for renewable energy.
- **Community Choice Aggregation.** Also known as Municipal Aggregation, CCAs allow cities and counties to aggregate customers in a regulated market within a defined jurisdiction to secure alternative electricity supply contracts on a community wide basis.
- **Direct and On-Site certification.** Direct Purchasing is a purchase made directly from renewable generators as an alternative to purchasing from a utility, competitive electricity supplier, or a renewable energy certificate marketer, while On-Site renewable energy is consumed at the same location where it is produced.

On behalf of consumers buying renewable energy products certified by Green-e Energy, the program requires that such 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 and the independent Green-e Governance Board over 20 years.

As the public's awareness of the impacts of pollution arising from electricity generation, energy security issues, and sustainable economic development has risen, the demand for renewable energy has increased greatly, as shown here. In fact, voluntary certified renewable energy sales in the U.S. have increased an average of 8% each year since 2012. 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 North America.

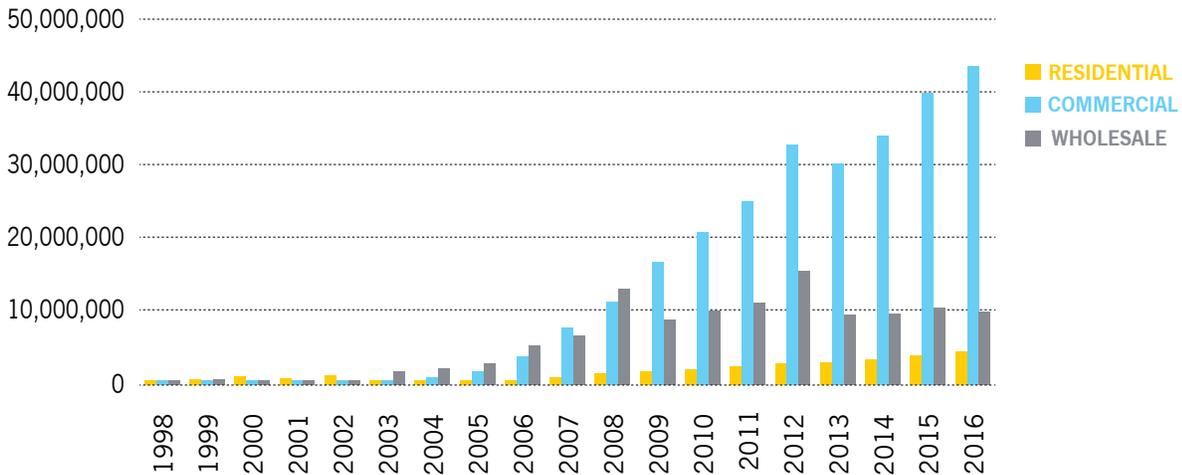
**FIGURE 1. GREEN-E ENERGY CERTIFIED RETAIL SALES BY PRODUCT TYPE, 1998–2016 (IN MWH)**



In 2016, Green-e Energy certified retail sales totaled 48,413,000 MWh, an overall increase of 9% compared to 2015 sales. Green-e Energy certified sales have increased at an average rate of 8% per year over the past four years. REC sales continue to drive the majority of certified sales, and grew by 8% in 2016. Certified sales through green pricing programs offered by regulated utilities grew by 8% compared to 2015, while customers in regulated markets purchasing through a

CCA purchased 358% more MWh than in 2015 due to the surge in the amount of CCAs that have launched in their local communities. Total certified competitive electricity sales stabilized following the decreases seen in the past few years, growing by 36% from 2015 levels as the competitive electricity market steadied following a period of uncertainty. Direct and Onsite certified MWh also grew about 18% from 2015.

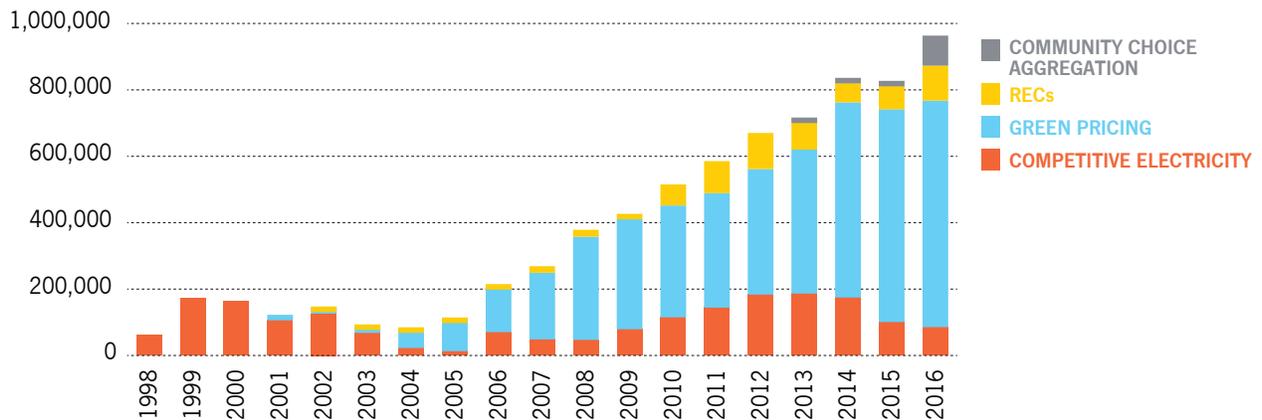
**FIGURE 2. GREEN-E ENERGY CERTIFIED SALES BY CUSTOMER TYPE, 1998–2016 (IN MWH)**



Sales by customer type grew about 15% from 2015 for residential customers and 9% for non-residential customers, with the latter accounting for the vast majority of certified MWh purchased at close to 44 million MWh. While MWh sold as certified wholesale transactions slightly decreased by 4% from 2015, residential sales went beyond 4.6 million MWh as more

utilities increasingly seek Green-e Energy certified green pricing options for their customer and more communities launch their own CCAs. Although there are significantly more residential customers that purchase Green-e Energy certified renewable energy, they tend to purchase smaller amounts than non-residential customers.

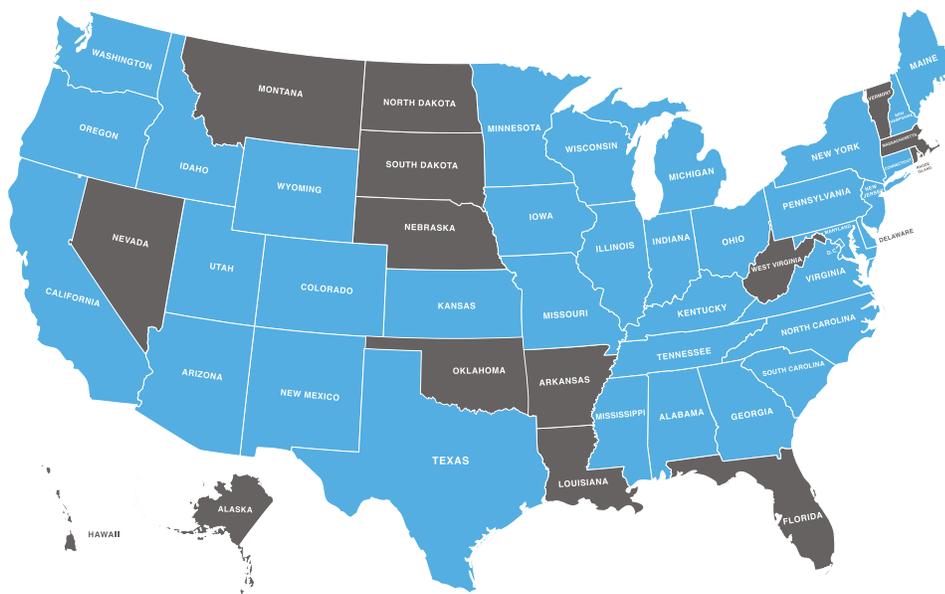
**FIGURE 3. NUMBER OF RETAIL CUSTOMERS PURCHASING GREEN-E ENERGY CERTIFIED PRODUCTS BY TYPE, 1998–2016**



2016 saw largest number of total retail customers purchasing certified products with an overall increase of 16% compared to 2015. The number of customers enrolled in a certified Green Pricing option has continued to grow, reaching 682,000 customers for a

6% growth from the previous year, while the number of customers enrolled in a certified CCA offering increased by 51% from 2015 to a total of 105,000 customers. The number of Competitive Electricity purchasers decreased to 85,000.

**FIGURE 4. STATES WITH GREEN-E ENERGY CERTIFIED RENEWABLE ELECTRICITY OPTIONS, 2016 (IN BLUE)**



Many customers throughout the U.S. have the option to purchase Green-e Energy certified renewable energy through their local utility or electric service provider. In 2016, bundled certified renewable electricity options were available in 37 states and Washington, D.C. This geographic spread across the country means that more electricity customers in many parts of the United States have the option to purchase certified renewable electricity

than ever before. RECs unbundled from electricity are available to buyers regardless of location. Businesses purchasing large MWh volumes tend to purchase unbundled RECs, often for multiple locations, while residential customers and businesses purchasing smaller volumes tend to purchase a bundled electricity product available through their utility or electric service provider.

**TABLE 1. TOTAL GREEN-E ENERGY CERTIFIED SALES OF RENEWABLE ENERGY BY PRODUCT TYPE AND CUSTOMER TYPE, 2016 (IN MWH, ROUNDED)**

	Retail		Wholesale
	Residential	Non-Residential	
RECs	351,000	40,433,000	10,102,000
Green Pricing	3,466,000	2,253,000	0
Competitive Electricity	372,000	808,000	0
Direct and Onsite	0	259,000	0
Community Choice Aggregation	427,000	43,000	0
<b>Total Sales</b>	<b>4,616,000</b>	<b>43,797,000</b>	<b>10,102,000</b>
<b>Total Retail: 48,413,000 MWh</b>			
<b>Total Unique Certified: 54,469,000 MWh</b>			
<b>Total Certified Transactions: 58,515,000 MWh</b>			

The total volume of all Green-e Energy certified transactions in 2016 reached over 58.5 million MWh. This total represents all transactions, including both certified retail sales to electricity end users looking to make a green power use claim, and wholesale sales to resellers of renewable MWh that did not claim the renewable electricity or RECs themselves. Green-e Energy certified wholesale transactions exceeded 10.1 million MWh in 2016. Of these certified wholesale transactions, over 4 million MWh were resold in Green-e Energy certified retail transactions. The remaining 6.1

million MWh were sold in non-Green-e Energy certified transactions to utilities, electric service providers, power marketers, and other buyers in the voluntary market—a slight increase from the 5.6 million MWh sold in non-certified transactions in 2015. Removing the instances of renewable MWh certified by Green-e Energy at both the wholesale and retail levels, Green-e Energy certified sales of over 54.4 million unique MWh in 2016, an increase of 9% from 2015 and the highest total of certified unique MWh to date.

**TABLE 2. TOP 10 STATES BY RETAIL SALES VOLUME (IN MWH) IN 2016**

Green-e Energy collects data on the number of retail customers by state and the MWh of certified products provided to them. The top 10 states in terms of sales volume have remained relatively constant over the past few years. In 2016, California supplanted Washington state for the highest volume of MWh for certified retail sales. The Western region once again dominates this list with 32% of all certified retail sales going to states in the WECC. At 66%, the top 10 states represent the majority of the total volume of certified retail sales.

State	% of total Sales
California	12%
New York	9%
Texas	7%
Washington	7%
Arizona	7%
Washington, D.C.	6%
Oregon	6%
Wisconsin	4%
Maryland	4%
Massachusetts	4%

**TABLE 3. PERCENT OF TOTAL RETAIL CUSTOMERS BY STATE, 2016**

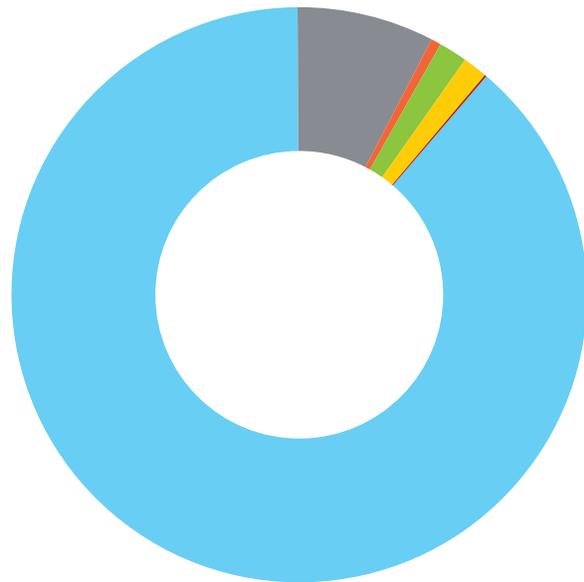
Retail customers buying Green-e Energy certified renewable energy are spread out throughout the U.S. 80% of retail customers are located in these top 10 states in 2016. New York was added to the top 3 states after not making the top 10 in 2015, but the Western region still contains just about half of retail customers in 2016.

There is a large degree of overlap between these two “Top Ten” lists, however the key point of difference lies in the purchase size of residential and non-residential customers. The states with the highest volumes have more non-residential customers.

State	% of customers
Oregon	25%
California	12%
New York	10%
Washington	7%
Utah	5%
Minnesota	5%
Colorado	5%
Michigan	5%
Wisconsin	3%
Virginia	3%

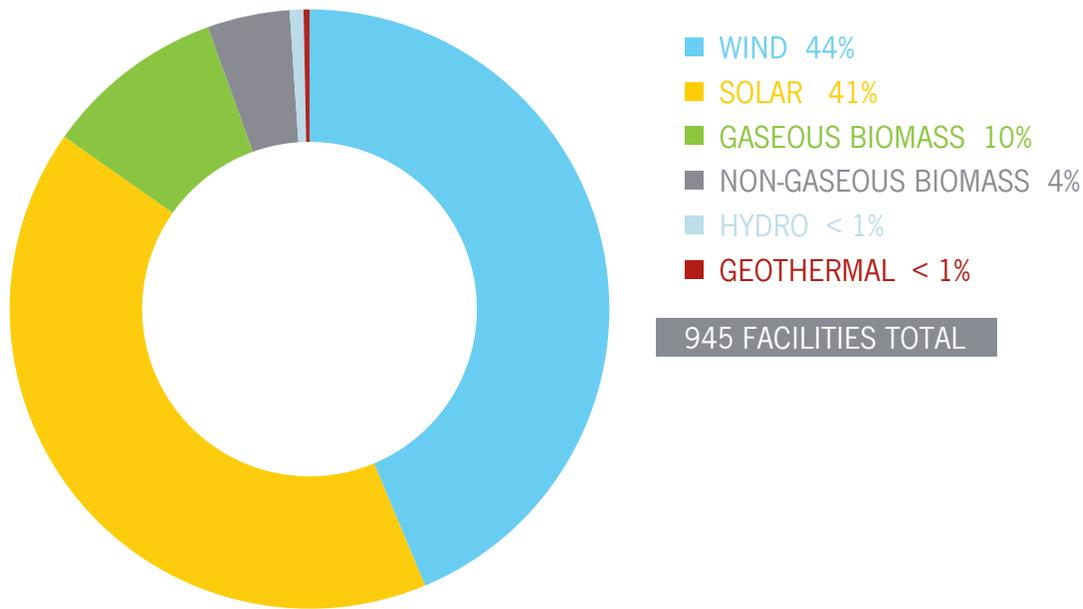
**FIGURE 5. CONTRIBUTIONS OF RENEWABLE RESOURCE TYPES TO TOTAL GREEN-E ENERGY CERTIFIED RETAIL SALES, 2016**

In 2016, Green-e Energy sales came from a range of resources across the United States and Canada. The resource mix of the voluntary market continues to be wind-dominated in 2016 as with wind facilities account for 89% of the total supply. Output from more than half of installed wind facilities in the U.S. is sold in Green-e Energy certified transactions, based on total capacity. Although solar energy represents only a small portion of the supply, its share nearly doubles from 2015 to 2016 after tripling from 2014 to 2015, showing rapid growth. On the other hand, the proportion of hydro in the resource mix continued to decrease in 2016 as hydro facilities age and phase out of Green-e Energy eligibility.



- WIND 89%
- NON-GASEOUS BIOMASS 8%
- LOW-IMPACT HYDRO 0.6%
- GASEOUS BIOMASS 1.6%
- SOLAR 1.4%
- GEOTHERMAL 0.1%

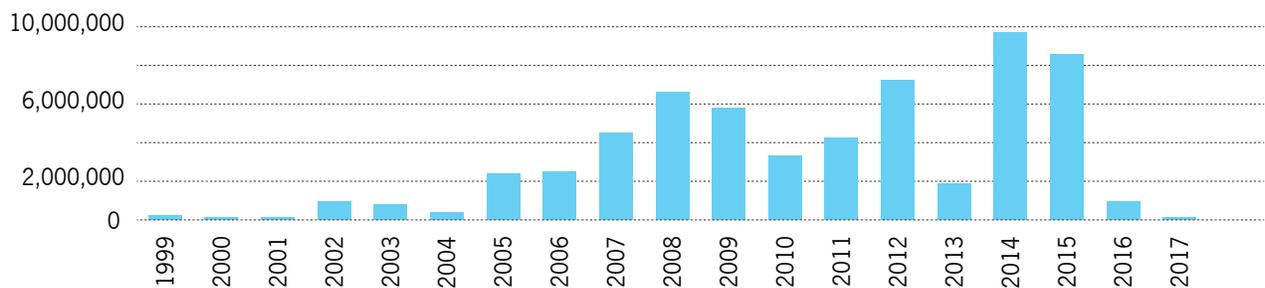
**FIGURE 6. TOTAL NUMBER OF FACILITIES BY RESOURCE TYPE**



945 unique generation facilities with a total capacity of over 42,700 MW supplied Green-e Energy certified products in 2016. Supply came from more wind facilities (413) than any other resource type, and wind comprises just under 92% of overall capacity. Overall, 95 more facilities were used in 2016 compared to 2015. The number of solar facilities used to supply

Green-e Energy certified products continue to grow at a fast pace; the number of unique solar facilities utilized in 2016 reached 388 unique facilities, or just over 41% of all facilities. Total solar capacity utilized nearly tripled in 2016, from 458 MW in 2015 to 1,319 MW, reflecting a trend toward larger-scale facilities that is especially prevalent in direct transactions.

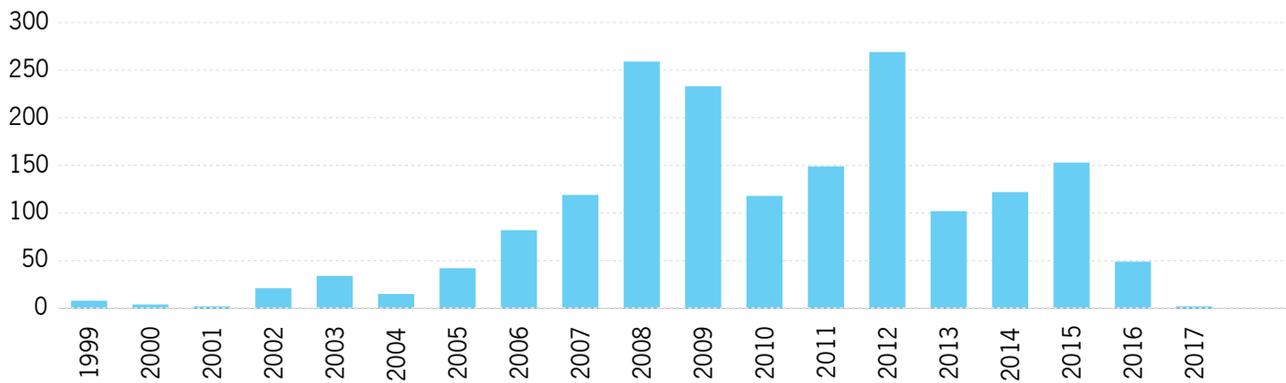
**FIGURE 7. MWH BY FACILITY DATE OF FIRST OPERATION OR REPOWERING**



Only new renewables are eligible to meet Green-e Energy standards. Eligible renewable facilities must have started operation or have been declared repowered in the last 15 years or otherwise been approved for

extended use in order to provide generation to a Green-e Energy certified product. In 2016, over 42% of MWh used to supply certified sales came from facilities that were less than five years old at the time.

**FIGURE 8. COUNT OF FACILITIES BY YEAR OF FIRST OPERATION OR REPOWERING**



While newer facilities provided more generation to certified sales in 2016, the actual number of facilities that provide generation is less skewed. Facilities between 5 and 10 years old made up just under 58% of all facilities that provided any amount of MWh to Green-e Energy certified sales. This may be due to the policy outlook

impacting certain states at that time—some states may have had rebate programs or tax incentives that were implemented at that time, or may have been pursuing compliance targets aggressively and therefore have surplus generation to contribute to the voluntary market.

**TABLE 4. TOP TEN STATES AND PROVINCES SUPPLYING RENEWABLE ENERGY TO GREEN-E ENERGY CERTIFIED RETAIL SALES BY PERCENT OF TOTAL CERTIFIED MWH, 2016**

Just over 82% of the renewable energy certified by Green-e Energy was sourced from 10 states. Supply from both Texas and Oklahoma account for more than 50% of the total supply of renewable electricity certified by Green-e in 2016. This is primarily related to the high wind content in many certified products, and the high rate of potential for (and installation of) wind facilities in the Midwest and Southern states such as Texas and Oklahoma. The difference between states with generators versus purchasers of renewable energy demonstrates how the market for unbundled RECs is allowing customers with limited access to local renewable energy products to support changes in generation portfolios in the U.S. and Canada.

State/Province	% of Total
Texas	27%
Oklahoma	22%
Kansas	10%
Iowa	6%
Nebraska	6%
Idaho	3%
Washington	3%
Florida	3%
North Dakota	3%
British Columbia	2%

**TABLE 5. GREEN-E ENERGY CERTIFIED SALES OF RENEWABLE ENERGY CERTIFICATES BY CUSTOMER TYPE, 2016**

	2016 Sales (MWh, rounded)	MWh: Percent Change from 2015	Percent of Total Retail REC Sales	Customers	Customers: Percent Change from 2015	Average Renewables Purchase Size (MWh)
Residential	351,000	32%	0.9%	71,000	34%	5
Non-Residential	40,138,000	8%	99.1%	34,000	102%	1,170
Total Retail	40,489,000	8%	100.0%	105,000	51%	390
Wholesale	10,102,000	0%		50	0%	198,000

Certified REC sales continue to steadily climb, with across the board growth in terms of total retail REC sales of 51% experienced in 2016 over 2015. The market is still driven by non-residential customers, the number of which more than doubled from 2016. Yet non-residential customers purchased on average around 1000 MWh less per customer from 2015, from 2,200 MWh in 2015 to 1,200 MWh in 2016. Residential customers grew by 34% 2015 as more REC marketers started to operate in the residential market. Based on the most recently available National Renewable Energy Laboratory (NREL) data, Green-e Energy certified sales are estimated to make up approximately 90% of all retail REC sales in the U.S.

**TABLE 6. GREEN-E ENERGY CERTIFIED SALES IN GREEN PRICING PROGRAMS BY CUSTOMER TYPE, 2016**

	2016 Sales (MWh, rounded)	MWh: Percent Change from 2015	Percent of Total Green Pricing Sales	Customers	Customers: Percent Change from 2015	Average Renewables Purchase Size (MWh)
Residential	3,466,000	7%	61%	666,000	7%	5
Non-Residential	2,253,000	9%	39%	16,000	1%	140
Total Retail	5,719,000	8%	100%	682,000	6%	8

Many customers can purchase a bundled renewable electricity product from their local electric utility. Utility green pricing programs certified by Green-e Energy consistently make up the majority of the National Renewable Energy Laboratory’s Top Ten rankings in terms of customer participation rate, total number of subscribers, total MWh sold, and green power sales as a percentage of total retail electricity sales. In 2016, these programs grew at a steady rate of 8% from 2015. A 7% growth in the total amount of residential customers contributed to the growth of certified Green Pricing sales, and the average purchase size remained at 5 MWh in 2016 from 2015. Non-residential customers increased their average purchase by 10 MWh from last year despite a steady number of customers. There is now more Green-e Energy certified renewable energy sold through green pricing programs than ever before, covering an increasingly large area of North America.

**TABLE 7. GREEN-E ENERGY CERTIFIED SALES OF ELECTRICITY BY ELECTRIC SERVICE PROVIDERS BY CUSTOMER TYPE, 2016**

	2016 Sales (MWh, rounded)	MWh: Percent Change from 2015	Percent of Total Competitive Electricity Retail Sales	Customers	Customers: Percent Change from 2015	Average Renewables Purchase Size (MWh)
Residential	372,000	-18%	32%	85,000	-14%	4
Non-Residential	808,000	96%	68%	700	-66%	1,100
Total Retail	1,180,000	36%	100%	85,000	-15%	14

In states where the electricity market is deregulated, customers have the option to choose their electric service provider (ESP).

Residential and non-residential sales and total customers of certified competitive electricity products both dropped in 2016. The decrease is in part due to reclassification of Green-e Energy certified CCA options to their own certification category from being included

in overall competitive electricity numbers as well as an industry trend of large companies shifting their energy strategy to include more on-site renewable installations, energy efficiency, or direct power purchase agreements with renewable energy facilities or utilities, while on the residential side the drop was driven in part by volatility in the competitive electricity market and voluntary decertification of some competitive electricity products.

**TABLE 8. GREEN-E ENERGY CERTIFIED SALES OF COMMUNITY CHOICE AGGREGATION PROVIDERS BY CUSTOMER TYPE, 2016**

	2016 Sales (MWh, rounded)	MWh: Percent Change from 2015	Percent of Total CCA Retail Sales	Customers	Customers: Percent Change from 2015	Average Renewables Purchase Size (MWh)
Residential	427,000	517%	91%	88,000	500%	5
Non-Residential	43,000	29%	9%	2,000	110%	20
Total Retail	470,000	358%	100%	91,000	474%	5

Also known as Municipal Aggregation, CCAs allow cities and counties to aggregate customers in a regulated market within a defined jurisdiction to secure alternative electricity supply contracts on a community wide basis. As more states adopt legislation that allows the establishment of CCAs, Green-e Energy has seen fast growth in terms of customers served by

CCAs and MWh supplied to those customers. 2016 followed this trend as there were increases of 358% and 474% in both certified sales and customers served by CCAs respectively, from 103,000 MWh and 16,000 customers in 2015 to 470,000 MWh and 91,000 customers in 2016.

# CONSUMER PROTECTION

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The Green-e Energy verification audit and review process protects customers by ensuring that the renewable electricity or RECs purchased and sold by the certified provider were not sold to more than one customer and that only one party has claimed use of that MWh of renewable energy. Replacement RECs are required when supply that has been submitted is ineligible for certification under the *Green-e Renewable Energy Standard for Canada and the United States*. Common reasons for ineligible RECs are double claims (meaning another entity in the chain of custody has claimed to be using the renewable energy) and product-specific restrictions (such as variation from the geographic-proximity requirements of electricity products). In 2016, the Green-e Energy audit identified a negligible amount of reported supply as ineligible for Green-e Energy certification, necessitating procurement of replacement supply by participants. This is due to a sustained market education outreach by Green-e staff and increased due diligence on the part of Green-e Energy participants in procuring supply.

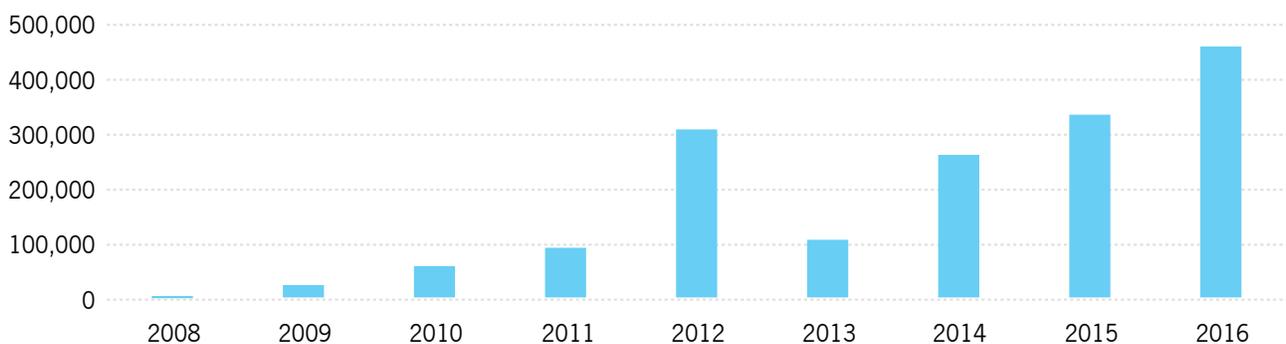
# GREEN-E CLIMATE

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Green-e Climate is the global retail standard for carbon offset certification, bringing chain-of-custody oversight to the voluntary offset market. Green-e Climate provides critical retail protections and assurances for buyers, sellers, and project standards, including confidence in product marketing and overall quality.

Sales in 2016 hit the highest certified sales volume in the history of the program (see Figure 9). The total volume of certified carbon offsets sold grew by more than 37% in 2016 from 2015, to over 456,000 metric tons carbon dioxide-equivalent (CO<sub>2</sub>e).

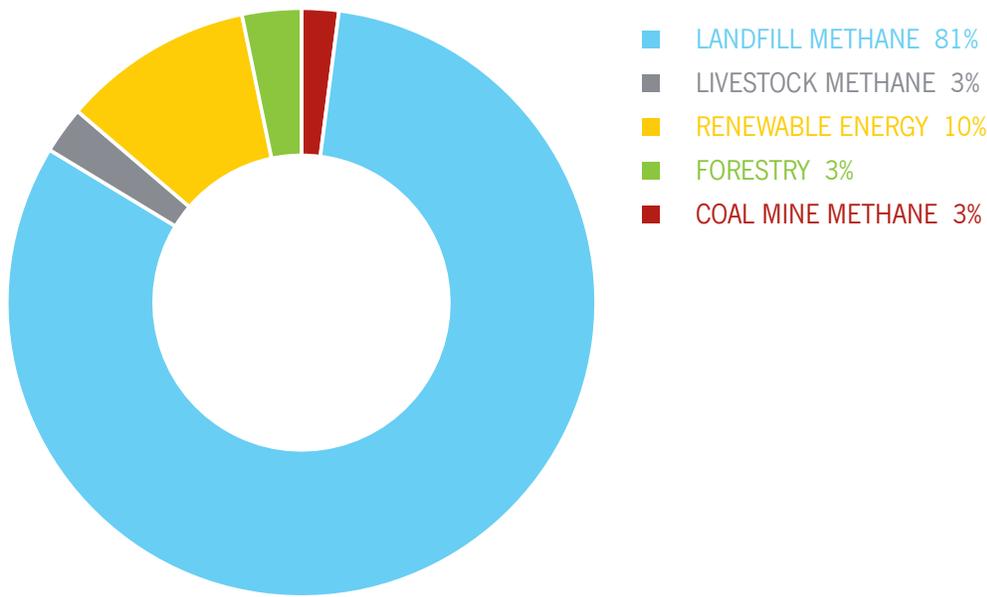
**FIGURE 9. GREEN-E CLIMATE GROWTH (CURRENT ENDORSED PROGRAMS ONLY)**



In 2016, Green-e Climate certified sales of greenhouse gas emissions reductions occurred at 26 different projects, all located in the United States. They were landfill gas methane capture (81% of supply), renewable energy (10% of supply), forestry (3% of supply), livestock gas methane capture (3% of supply), and coal mine methane capture (Figure 10). In 2016, projects used

to supply Green-e Climate certified carbon offsets were registered with two endorsed project standards—the Climate Action Reserve, or the Verified Carbon Standard. The Climate Action Reserve represented 69% of total supply used and the Verified Carbon Standard represented the remaining 31%.

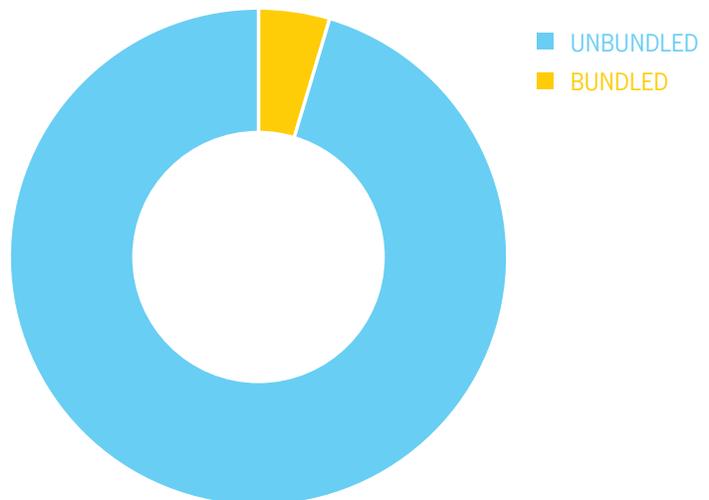
**FIGURE 10. GREEN-E CLIMATE PROJECT TYPES, 2016**



Nearly 95% of certified sales in 2015 were to commercial buyers, in either one-time or multi-year offline, over-the-counter transactions. Leadership in Energy and Environmental Design (LEED) building certification, which requires Green-e Climate certification (or equivalent) for offsets that can be awarded points for LEED certification. About 6% of certified sales in 2016 were sales for LEED building certification, and 5% of certified sales were offsets bundled with natural gas products (Figure 11).

Buyers were located in the U.S., Canada, China, France, Germany, Hong Kong, South Korea, Spain, Argentina, Peru, and the UAE. In the U.S., buyers of Green-e Climate certified carbon offsets were located in 26 states and the District of Columbia. Buyers located in Illinois bought the largest amount of certified carbon offsets in 2015, followed by North Carolina and New York, and the largest number of buyers were located in California, Virginia, and Maryland.

**FIGURE 11. SALES OF GREEN-E CLIMATE CERTIFIED OFFSETS BUNDLED WITH NATURAL GAS, 2016**



**305 COMPANIES PARTICIPATED IN GREEN-E ENERGY IN 2016**, including 62 sellers offering 70 Green-e Energy certified REC products, 233 utility green pricing program participants offering 43 certified green pricing programs,\* 15 competitive electricity suppliers offering 22 certified renewable electricity programs, 5 Community Choice Aggregation sellers offering 5 products, and 4 entities with certified Direct or Onsite options.

3 Phases Renewables	Direct Energy	Orion Renewable Energy
3Degrees Inc.	Dominion Energy Virginia	Trading Group LLC
ACT Commodities, Inc. (Amsterdam Capital Trading B.V.)	DTE Electric	Pacific Gas and Electric (PG&E)
AEP Energy, Inc.	DTE Energy	PacifiCorp
Agera Energy	EDF Trading	Pine Gate Renewables, LLC
Alameda Municipal Power	Element Markets	Platte River Power Authority (PRPA)
ALLETE Clean Energy	FirstEnergy Solutions Corp.	Plymouth Rock Energy
Alliant Energy	Georgia Power	Portland General Electric (PGE)
Ambit Energy, LP	GGP Inc.	Powerex Corp
Ameren Missouri	Good Energy	Puget Sound Energy (PSE)
Apex Clean Energy	Green Mountain Energy	Reliant Energy Retail Services
Apple, Inc.	Green Power EMC	Renewable Choice Energy
Arcadia Power	Greenlight Energy Group LLC	Sacramento Municipal Utility District (SMUD)
Arizona Public Service (APS)	Idaho Power Company	Salt River Project (SRP)
Austin Energy	Indianapolis Power & Light Company (AES)	San Diego Gas & Electric (SDG&E)
Avangrid Renewables (Iberdrola)	J.P. Morgan Ventures Energy Corporation	Santee Cooper
Azalea Solar, LLC	Just Energy	Seattle City Light
Blue Delta Energy	Lancaster Choice Energy	Silicon Valley Power (SVP)— City of Santa Clara
Blue Spruce Energy Services	LG&E and KU Energy	South Jersey Energy Company (SJE)
BlueRock Energy, Inc.	Liberty Power	South Plains Wind Energy II, LLC
Bonneville Environmental Foundation (BEF)	Luminant Energy Company, LLC	Southern California Edison (SCE)
Calpine Energy Solutions, LLC	MC Squared Energy Services	Sterling Planet
Carbon Solutions Group (CSG)	MCE Clean Energy	Stream Energy
Champion Energy Marketing, LLC	MidAmerican Energy Company	Suez Energy Resources NA, Inc. (now ENGIE)
City of Palo Alto Utilities	MidAmerican Energy Services	Tennessee Valley Authority (TVA)
CleanChoice Energy (Ethical Electric)	MP2 Energy	TransAlta
CleanPowerSF	NativeEnergy	TransCanada Power Marketing Ltd.
Clear Energy Brokerage & Consulting LLC	Natural Capital Partners	TXU Energy
Community Energy, Inc.	New York Power Authority (NYPA)	University of California, Irvine
ConEdison Solutions	NextEra Energy Resources	We Energies
Constellation Energy Power Choice LLC	North American Power and Gas, LLC (NA Power)	Westar Energy, Inc.
Constellation Energy Services, Inc.	Northern Indiana Public Service Company (NIPSCO)	WGL Energy Services, Inc.
Constellation NewEnergy	NRG Business Solutions	WPPI Energy
Consumers Energy Company	OneEnergy Renewables	Xcel Energy
Cypress Creek Renewables	Origin Climate	

\* Retail distributors not listed

# GREEN-E MARKETPLACE

Green-e Marketplace recognizes organizations that use renewable energy or carbon offsets and enables them to demonstrate their environmental commitment and communicate with stakeholders through the use of the nationally recognized Green-e logo and additional promotional tools. In 2016, Green-e Marketplace welcomed Procter & Gamble, its largest corporate participant since the program launched over a decade ago. The first Procter & Gamble brand to begin labeling products with the Green-e logo was Herbal Essences, with the logo appearing on a dozen shampoos and conditioners.

Overall, the total number of Green-e Marketplace companies participating in 2016 decreased to 29. At the end of 2016, there were over 500 products and companies certified by Green-e Marketplace.



A look at the Green-e logo on a bottle of Herbal Essences shampoo, the newest Green-e Marketplace participant.

IN 2016 GREEN-E MARKETPLACE PARTICIPANTS PURCHASED OR GENERATED OVER 647,500 MWH OF RENEWABLE ENERGY.

# GREEN-E PROGRAM GOVERNANCE

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Green-e Energy and Green-e Climate are governed by the independent Green-e Governance 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. 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.

## Endnotes

1. Based on consumption levels in 2016 according to the US Energy Information Administration, [www.eia.gov/electricity/data.php#sales](http://www.eia.gov/electricity/data.php#sales)
2. Based on total U.S. wind power capacity installed in 2016 according to AWEA's U.S. Wind industry 2016 Annual Market update. Available at [www.awea.org/AnnualMarketReport.aspx?ItemNumber=10217](http://www.awea.org/AnnualMarketReport.aspx?ItemNumber=10217)



## 2016 Green-e Verification Report

This Annual Verification Report highlights the results of the annual verification process audit for Green-e® participants in Green-e Climate, Green-e Energy, and Green-e Marketplace. Green-e is North America's leading independent certification and verification program for renewable energy and greenhouse gas emission reductions in the voluntary market. To learn more, visit [www.green-e.org](http://www.green-e.org).