

# The Geography of Green Power (2017 Data)

In 2017, over five million customers procured about 113 million megawatt-hours (MWh) of green power in the United States, which represents about 27% of all U.S. renewable energy sales, excluding large hydropower. In this fact sheet and a recent report, we use available data to illustrate the geography of green power demand (in terms of number of customers) and supply (in terms of MWh of generation) by state. For a more complete assessment of voluntary green power markets, see the informational resources listed at the end of this fact sheet.

For this fact sheet, green power refers to the *voluntary* purchase of renewable electricity by retail electricity customers, as opposed to renewable energy procurement to comply with mandates imposed by law or regulation

## Green Power Demand

Green power demand is ubiquitous across the states, but the pathways for green power procurement vary by region. Figure 1 depicts the primary way that customers procure green power by state. In most states, most green power customers buy green power through utility green pricing programs, where utilities buy renewable energy on behalf of residential and small commercial customers.

In ten states and Washington, D.C., most green power customers buy green power through competitive suppliers, meaning non-utility providers that sell electricity in markets that allow retail electricity competition. In four states, most green power customers buy green power through community choice aggregations (CCAs), governmental entities that buy electricity on behalf of the residents

of some jurisdictional area. In the remaining states, most green power customers buy green power through unbundled renewable energy certificates (RECs), contractual mechanisms that validate claims for renewable energy usage. Other forms of green power procurement include power purchase agreements, renewable energy contracts administered by utilities, and community shared solar.

Figure 2, on the following page, identifies and describes the top ten states in terms of the number of MWh of green power generated and in terms of number of customers. The primary form of green power generation or demand is identified in the figure for each state. Detailed state-by-state estimates of green power demand and supply are available in a downloadable format at <https://data.nrel.gov/submissions/98>.

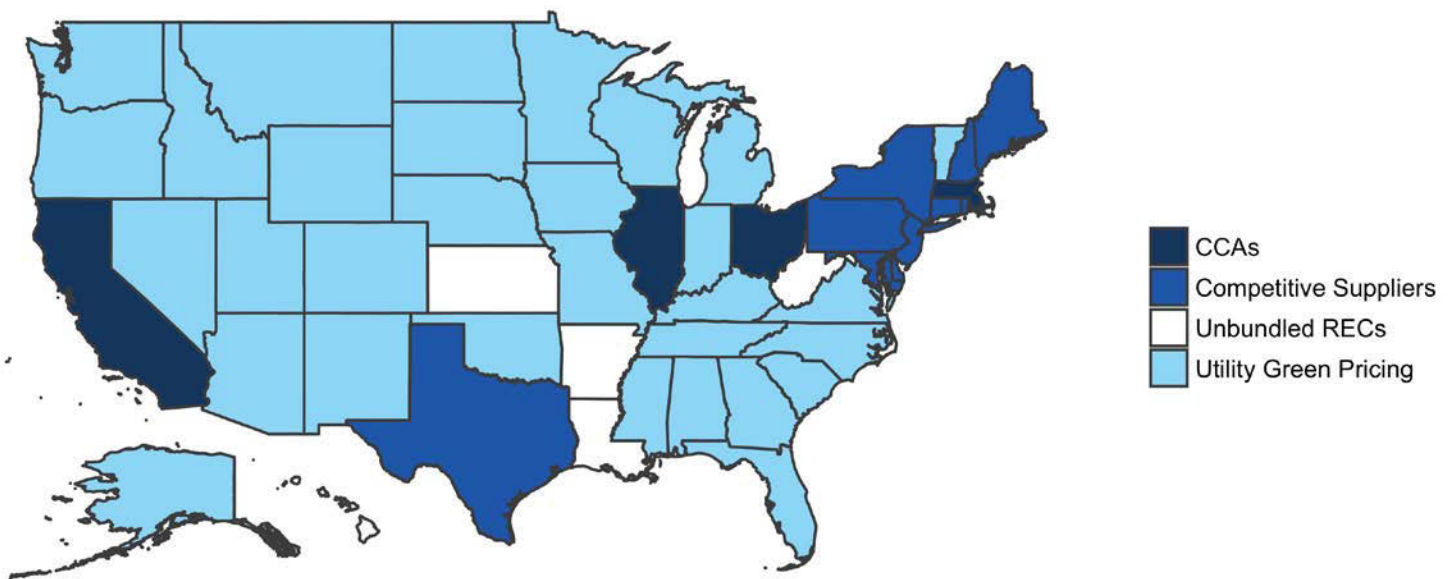


Figure 1. Primary form of green power demand (number of customers) by state

Green Power Generation In terms of MWh generated in the state	Green Power Demand In terms of number of customers in the state
 <p><b>1. Texas</b> 32.7 million MWh 16.7 million MWh sold through unbundled RECs</p>	 <p><b>1. California</b> 1.4 million customers 1.2 million customers participate in green power CCAs.</p>
 <p><b>2. Oklahoma</b> 14.4 million MWh 13.7 million MWh sold through unbundled RECs</p>	 <p><b>2. Massachusetts</b> 970,000 customers 860,000 customers participate in green power CCAs</p>
 <p><b>3. Utah</b> 11.9 million MWh 10.4 million MWh sold through power purchase agreements</p>	 <p><b>3. Texas</b> 740,000 customers 720,000 customers buy green power from competitive suppliers</p>
 <p><b>4. Oregon</b> 5.5 million MWh 4 million MWh sold through power purchase agreements</p>	 <p><b>4. Illinois</b> 610,000 customers 460,000 customers participate in green power CCAs</p>
 <p><b>5. Kansas</b> 4.4 million MWh 4.4 million MWh sold through unbundled RECs</p>	 <p><b>5. New York</b> 330,000 customers 230,000 customers buy green power from competitive suppliers</p>
 <p><b>6. Iowa</b> 4.4 million MWh 2.1 million MWh sold through unbundled RECs</p>	 <p><b>6. Oregon</b> 260,000 customers 210,000 customers buy green power from utility green pricing programs</p>
 <p><b>7. Illinois</b> 3.8 million MWh 1.7 million MWh sold through competitive suppliers</p>	 <p><b>7. Pennsylvania</b> 200,000 customers Nearly all PA green power customers buy green power from competitive suppliers</p>
 <p><b>8. Colorado</b> 3.5 million MWh 2.3 million MWh sold through power purchase agreements</p>	 <p><b>8. Ohio</b> 190,000 customers 100,000 customers participate in green power CCAs</p>
 <p><b>9. Washington</b> 2.8 million MWh 1.1 million MWh sold through community choice aggregations (out of state)</p>	 <p><b>9. Washington</b> 99,000 customers 86,000 customers buy green power from utility green pricing programs</p>
 <p><b>10. California</b> 2.7 million MWh 1.6 million MWh sold through community choice aggregations</p>	 <p><b>10. Minnesota</b> 73,000 customers 63,000 customers buy green power from utility green pricing programs</p>

## More Information

This fact sheet summarizes findings presented in *Status and Trends in the U.S. Voluntary Green Power Market (2017 Data)*, which is available at [www.nrel.gov/docs/fy19osti/72204.pdf](http://www.nrel.gov/docs/fy19osti/72204.pdf). For more information on green power, visit [www.nrel.gov/analysis/green-power.html](http://www.nrel.gov/analysis/green-power.html). For questions, contact Eric O’Shaughnessy at [eric.oshaughnessy@nrel.gov](mailto:eric.oshaughnessy@nrel.gov).

Figure 2. Top 10 states in terms of green power generation and demand (number of customers). Not all green power customers procure enough renewable electricity to cover 100% of their electricity usage. For instance, most of the 1.2 million CCA green power customers in California procure more renewable energy than would otherwise be required by state renewable portfolio standards but less than 100%.



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