



Summary

To view the full Guide, visit <https://www.epa.gov/greenpower/guide-purchasing-green-power>



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Today, the diverse array of energy resources used to create electricity can produce very different environmental impacts. In the United States, power generation is still the nation's single largest source of industrial air pollution and is a major contributor to greenhouse gas emissions, despite advances in pollution controls over the last 30 years¹.

Electricity generated from renewable resources such as solar, wind, geothermal, some forms of hydropower, and biomass has proven to be an increasingly attractive choice for electricity consumers. This Guide to Purchasing Green Power focuses on voluntary purchases of electricity generated from these renewable resources. It is intended for businesses and other organizations that want to diversify their electricity supply and reduce the environmental impact of their electricity use. Although renewable resources can also be used for heating and cooling needs or for transportation, this guide does not address those applications.

Green power purchases are attractive to electricity consumers because they allow organizations and individuals to use renewable electricity that is above and beyond what is required by public policy mandates such as the renewable portfolio standards adopted by 29 states and the District of Columbia. Purchases of green power can approach or even exceed 100 percent of an organization's electricity use. Green power purchases have and continue to play an important role in driving the development of new renewable energy projects in the United States (see Figure S-1) and are expected to be an important driver for the overall market for the foreseeable future.

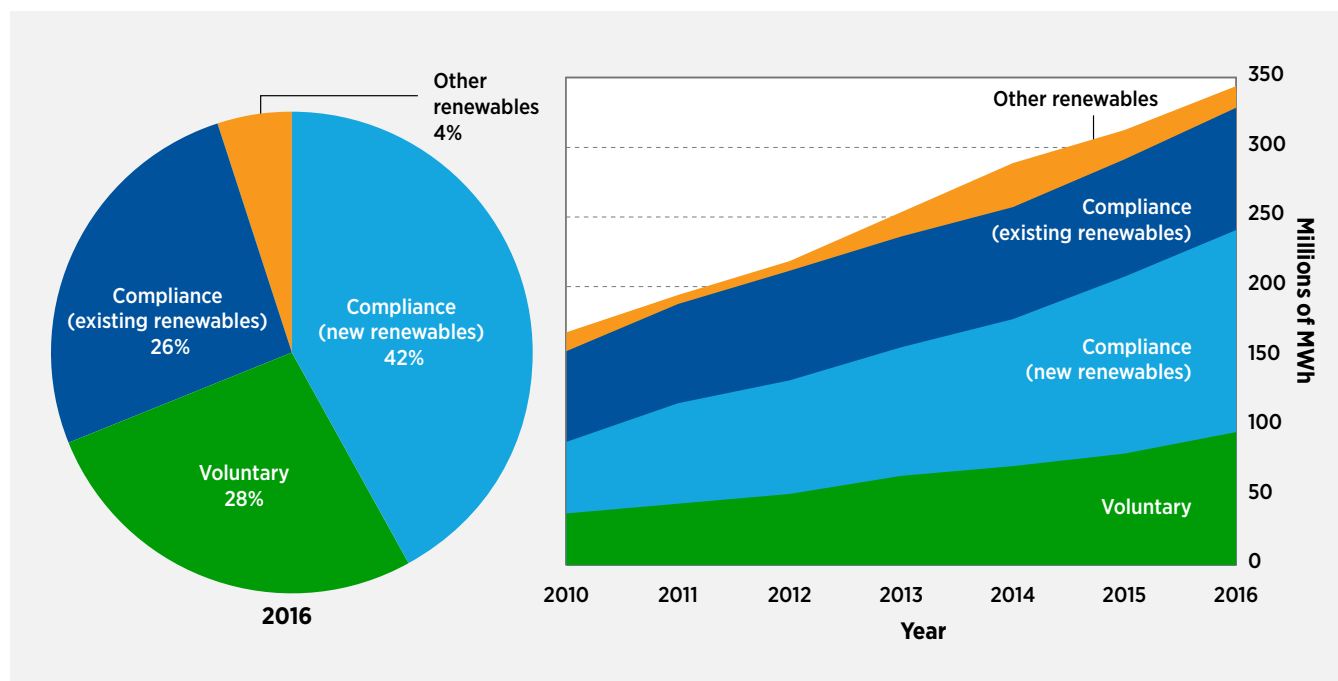
A wide range of organizations purchase green power, including federal, state and local governments; universities; businesses; nonprofit organizations; and individual consumers. By purchasing green power, these organizations are helping protect the environment, meeting their own financial goals, enhancing stakeholder relations and contributing to the development of domestic energy resources. In 2016, renewable electricity generation in the United States (excluding hydropower) approached 342 million megawatt-hours (342 billion kilowatt-hours)—enough to meet the annual electricity needs of over 31 million average U.S. homes.

Green power is an effective part of a strategic energy management plan. Successful energy management plans consider options such as energy efficiency, load management, power purchases, self-generation and non-electric (thermal) energy needs. As with any investment portfolio, the best mix of these options depends on the organization's goals, the cost of various alternatives, and external market conditions.

Over the past 15 years, the market has developed a variety of offerings for electricity consumers, allowing them to purchase green power from renewable sources in verified transactions. The market has gained a wealth of experience with voluntary procurement methods, including physical power purchase agreements, green tariffs and financial power purchase agreement contracts, and self-generation, either on-site or off-site. This latest revision to the Guide to Purchasing Green Power provides an overview and key details on each of these procurement methods.

¹ U.S. Environmental Protection Agency. (2015). Sources of greenhouse gas emissions. Retrieved from <https://www.epa.gov/ghgemissions/sources-greenhouse-gas-emissions>.

Figure S-1. Demand Drivers for Renewable Energy²



Note: Compliance (new renewables) represents the amount of voluntary sales driven by state programs or policies that require regulated entities to procure RECs from “new” projects, while compliance (existing renewables) are based on sales from existing renewables which account for 26%. Voluntary market sales represent over 27% of all U.S. non-hydro renewable energy sales in 2016. Other renewables include utility renewable energy purchasing beyond RPS requirements and on-site generation.

While voluntary purchases of green power are becoming more common in today’s electricity markets, these markets offer many choices. This guide is intended to provide guidance to organizations that have decided to purchase or invest in green power, as well as organizations that are still considering the merits of green power.

The Guide to Purchasing Green Power addresses the following commonly asked questions:

- What is renewable energy and green power? (p. 3)
- What is the importance of product certification and verification? (p. 5)
- What benefits will my green power purchase bring? (p. 6)
- What is the cost of green power? (p. 12)
- What are the options for purchasing green power? (p. 17)
- How should an organization choose a green power product? (p. 27)
- What are the best ways to buy green power? (p. 37)
- What are the steps for installing on-site renewable generation? (p. 47)
- How do I measure and account for emissions? (p. 54)
- How do I communicate my green power purchase to stakeholders? (p. 55)

² O’Shaughnessy, E., Heeter, J., Cook, J., and Volpi, C. (2017). *Status and Trends in the U.S. Voluntary Green Power Market (2016 data)*. National Renewable Energy Laboratory. <https://www.nrel.gov/docs/fy18osti/70174.pdf>.

