

What You Need to Know About Electricity

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For Americans, electricity use is a major component of our ecological footprint. But we tend to pay it the least attention, yet there are opportunities to save and conserve if you understand how the electric grid works.

While some people have the tens of thousands of dollars required to convert our homes to solar power and it's not like we can shop for electrical utilities like internet providers. So we try to turn off the lights when we leave a room, and focus most of our attention on recycling and buying green products. But even if it seems like you can't do much about the energy you use, it's important to understand where your energy comes from and how it affects your ecological footprint.

Knowing your own [energy source](#) and its ecological cost can help you decide where to focus your own actions to make the biggest difference.

Power Structure

Your electric bill might come from the city, but your electricity doesn't. The power plants that generate electricity and the utilities that distribute the electricity to users are mostly investor-owned corporations. Among electricity generators, [nuclear power plants](#) are almost all privately owned — as are most [coal plants](#) and [natural gas](#) producers. The [majority of dams](#), which produce hydroelectric power, are private, too, although the very largest ones belong to the federal government.

[Public power utilities](#) — community-owned, not-for-profit power providers — only generate about 10 percent of the electricity in the U.S. and distribute 15 percent of the power used. There are also cooperative utilities, but the majority are corporations, often the same ones that own the power generating plants.

Power utilities act as electricity wholesalers, buying power from multiple generators. That means the electricity you use in your home does not come from a single source. For example, [Washington state](#) is famous for exporting hydropower courtesy of the [Grand Coulee Dam](#). But a significant percentage of the energy used by its residents still comes from [natural gas](#).

Types of Electricity

The phrase “clean energy” is a little bit confusing. Once it enters the power lines, all electricity is the same. But even if you can't tell the difference in the final product, the source of electricity makes a big difference in whether energy is “clean” or “dirty.” In the United States, few people rely on a single energy source, and the mix can vary widely by state and region. The [overall power mix](#) in the U.S. comprises:

Natural gas	35%
Coal	27%

Nuclear	19%
Nonhydroelectric renewables	10%
Hydroelectric (conventional)	7%
Petroleum and other sources	1%

Each of these has its own environmental consequences. They all use nonrenewable resources, generate pollution and/or hazardous waste, or destroy sensitive habitats. In the coming weeks, Earth911 will look at where Americans get their power in more depth and analyze the strengths and drawbacks of each of these sources.

Your Energy Source

The U.S. Energy Information Administration provides [detailed information](#) on states' power generation and consumption, and the New York Times translated that data into [handy graphics](#) that are easier to comprehend.

To get a really clear idea of your own energy footprint, EPA's [Power Profiler](#) lets you to enter your ZIP code and average monthly electricity use (you can find this on your latest electric bill) for a personalized calculation of the emissions generated by your home. It will even tell you how many trees you'd have to plant to offset the carbon produced by that much electricity.

What You Can Do

If, like most people, you can't possibly plant enough trees to offset the carbon your electricity produces, there are steps you can take to reduce your impact. The greenest thing you can do is opt out of commercially provided electricity and make your own [solar power](#). It can be more [affordable](#) than you think.

But even if your own solar power system is out of reach, you might be able to make your energy greener. Many utilities offer green power portfolios. Let's return to the example of Washington state. Even though Washington's basic energy mix is one of the greenest in the country, the city of Seattle's [Green Up](#) program gives residents the option of supporting newer renewable energy sources through a surcharge on their electric bill. Contact your local utility to find out if a similar program is available where you live.

Programs like Green Up are somewhat unusual, but [energy efficiency programs](#) are much more common. Utilities offer rebates and incentives on everything from [home energy audits](#) to insulation and programmable thermostats. But even if your utility company can't help you at all, you can reduce your usage at home with simple [energy hacks](#) that will also save money.

What Difference Does it Make?

Using less energy is always a good idea. But if you live in a state like Vermont, Idaho, or Washington — the states with the highest reliance on renewables — then you might prioritize other issues. Driving less and switching to an electric vehicle would have more impact than turning down the thermostat.

But if you live in Delaware, Ohio, or New Jersey — where renewables make up less than 3 percent of the energy portfolio — the calculations may look a little different. [Electric vehicles are greener](#) than regular cars even when they draw power from coal-fired plants. But the margin of improvement may not be worth the cost compared to home efficiency improvements like insulation and triple-paned windows if your electricity is dirty.

There is no such thing as an energy source free from environmental impacts, but all electricity is not created equal. Individuals don't always have a lot of control over where their electricity comes from. But knowing the environmental costs of your energy mix can help you make better environmental decisions. Even if it's only to consistently turn off the lights when you leave the room.

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