

Green Earth



Options for Solar Power

Solar panels are popping up on roofs all across America as more and more families are using the sun to power their lives.

Depending on where you live, you may even have solar companies visiting your home to offer you financing and other plans on putting solar panels in for you. But before you sign any paperwork, here's what you need to know about solar energy from the U.S. Department of Energy.

HOW DOES SOLAR WORK?

Photovoltaics, or PV, are the panels you've seen in rooftops or lined up in fields. When the sun shines on a solar panel, the photons in the sunlight are absorbed by the panel's cells, creating an electric field across the layers and electricity to flow.

Solar panels work in all climates, but some rooftops may not be suitable for a solar panel system because of the roof's age or tree cover. The contractors and you should also consider the size, shape and slope of your roof. Solar panels tend to work best on south-facing roofs with a slope between 15 and 40 degrees.

STARTING THE PROCESS

Solar co-ops and solarize campaigns can help you start



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the process of going solar. Some of these campaigns work by allowing groups of homeowners to work together to negotiate rates and create interest in solar through limited-time offers. Generally, the more people that participate in the program, the less installations will cost.

How much you save with

solar depends on how much power you use, the size of your solar system, if you buy or lease that system and how much power you generate. Your utility will also set electric rates and how much it will compensate you for the excess solar energy you send back to the grid. Solar may already be competitive with the electrici-

ty sold by your local utility; check the prices in your area through the National Utility Rate Database.

FINANCING

You have many different options when you decide to go solar. Solar panel systems can be bought with loans, through leases or through

power purchase agreements. Loans can lower the upfront costs of your system and, in many cases, monthly loan payments are smaller than your typical energy bill. Solar leases and PPAs allow consumers to host solar energy systems that are owned by solar companies and purchase back the electricity generated.

Cutting Off Food Waste

Food waste is estimated at a whopping 30-40% of the U.S. food supply, the U.S. Department of Agriculture says.

That means we, as Americans, waste about 133 billion pounds of food worth about \$161 billion every year. Wholesome food that could have feed families is going to landfills and the land, water, labor and energy used to produce, process, transport and prepare that food is wasted, too.

CAUSES OF FOOD WASTE

Food loss occurs at every stage of the production process. Spoilage, for instance, occurs at every stage of the supply chain. Insects, rodents, birds, molds and bacteria also take their share. Once the food gets to the store, it's subject to equipment malfunctions, over-ordering and tossing out blemished goods. At the last stage, consumers contribute by buying or cooking more than they need and throwing out the extras.

HOW TO REDUCE FOOD LOSS AND WASTE

The best way to stop food waste, the USDA says, is to keep it from happening in the first place. Some easy steps to prevent food waste in your home is to plan your meals. Make a list before you go to the grocery store and buy only



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what you need. Cook and serve only what you'll eat and also plan to use your leftovers. Leftovers should be used within three to four days or frozen immediately. Try giving them a new life by using them in dishes that are different from your first. Your scraps can even be reused as compost to help your plants grow.

Restaurants are famous for

offering huge portions. Try and order only what you can finish. Ask the wait staff about portion sizes and take leftovers home to keep for your next meal.

DONATING FOOD

If you end up purchasing more food than your family can eat, consider donating it to local food banks, soup kitchens, pantries and shelters. For

business owners such as restaurants and caterers, you can donate perishable prepared foods to help families in need. Always check with the organizations you're going to donate to as your food may require special handling and distribution to keep it safe.

FOOD IN LANDFILLS

Once your food waste

leaves your home, it continues to disrupt the natural environment. Food is the single largest category of material sent to municipal solid waste landfills. There, it generates methane, a harmful greenhouse gas.

By turning your food waste into compost for your garden, you produce less methane and help the environment.



Consider Sustainability Causes

In addition to taking steps such as reducing your carbon footprint and reducing food waste, you can also remember organizations that work to help the environment in your annual giving.

But how do you evaluate which organizations are making the best use of your money? Keep reading to find out.

CHOOSING A CHARITY

You can use sites such as Charity Navigator to evaluate potential organizations to give your hard-earned money to. Charity Navigator looks at several categories when ranking environmental categories. They are:

- Environmental advocacy: Charities that work on addressing environment issues and advocate for change through law and policy,

research or direct action.

- Environmental protection and natural resource conservation: These charities work to protect and to conserve land, water and other natural resources. They also advocate for strong stewardship practices.

- Environmental health and justice: Charities that focus on environmental health disparities, toxins and ensuring all people have access to a healthy environment.

- Environmental education: These charities educate the public across age groups, helping people understand environmental issues and

engage in future problem solving and action.

RECOMMENDED CHARITIES

Here are just a few of the highest-ranked (four-star) charities from Charity Navigator.

The Climate Reality Project is an environmental protection and conservation organization based in Washington, D.C., that aims to catalyze a global solution to the climate crisis by making urgent action a necessity across every level of society. It earns a 92.23 out of 100, with a 100 in accountability and transparency.

Conservation International is based in Arlington, Virginia, with a 91.17 score out of 100. Conservation International applies innovations in science, economics, policy and community participation to protect Earth's richest regions of plant and animal

diversity and demonstrate that human societies can live harmoniously with nature.

Waterkeeper Alliance is based in New York City. Scoring 92.61 out of 100, it's a global movement for clean, healthy and abundant water for the people and the planet. It is made up of more than 300 Waterkeeper Organizations and affiliates on six continents.

Asian Pacific Environmental Network, in Oakland, California, scores a 90.92 out of 100. It was founded in 1993 and aims to empower low-income Asian Pacific Islander communities to achieve environmental and social justice. It works through direct organizing in local communities, by building a network of API organizations and by working in multiracial alliances to affect regional and national social change.

Going Green at School

Pencils, paper, notebooks and more make going to school a somewhat not-green proposition for many families.

There are ways, though, to paint getting your education green. Here are just a few of them.



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RECYCLING BIN DECORATING CONTEST

Start a recycling bin decorating contest to get each class excited about recycling materials. Put them on display and have students vote for their favorites. One idea from WeAreTeachers is to make it into a hungry recycling monster that eats paper, plastic, cans and more.

ADD INDOOR PLANTS

Some indoor plants can naturally purify the air in the classroom and provide health benefits. Look for easy to grow and maintain plants, such as a spider plant, snake plant or pothos. Let students help care for them.

DO A WASTE AUDIT

Grab gloves, dump trash cans and see how many recyclables your class can find in your school's garbage. Tally up the misplaced items and talk about the benefits of recycling (and the consequences of not recycling) to the whole school.

USE ENVIRONMENTALLY FRIENDLY CLEANERS

Especially during the pandemic, cleaning is a priority in classrooms. Make the switch to natural, environmentally friendly products and ask students to contribute. Teach them how to read labels and look for cleaners with warnings or cautions about toxicity.

ZERO-WASTE CLASSROOM

Start slow and try for a zero-waste day or week to test it out, then aim for longer and longer periods as it goes on. Make it a challenge for students and faculty alike.

PLANT A GARDEN

Find space on the school grounds and turn it into a

garden plot. Students can learn about how plants grow and where their food comes from, all while improving the environment.

ENCOURAGE WALKING OR BIKING TO SCHOOL

Designate a day to encourage students to find green ways to get to school, such as walking, biking or riding a scooter. Offer rewards for keeping it up throughout the year.

INSTALL RAIN BARRELS

Catch rainwater from around the campus to water the school garden and all those indoor plants. Reusing rainwater reduces the amount of water that ends up in the sewer system and the fresh water is better for your plants.



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USE RECYCLABLES FOR ART PROJECTS

Collect unwanted paper, cans, bottle caps, paper towel rolls and more to make a mural or other artwork that the whole school can enjoy.

USE NATURAL LIGHT

Flip off the fluorescents and open the blinds and shades to let the sun shine in. Natural light can lead to higher productivity and improve the overall mood in the classrooms.



How to Recycle Batteries

Millions of batteries are bought and used in American households every year.

Those numbers increased rapidly once those households started getting handful after handful of small, portable electronics, power tools and other gadgets.

Simply tossing batteries in the trash, however, isn't the best way to get rid of them when they're done working. Keep reading to learn more.

TYPES OF BATTERIES

Batteries come in many different types, sizes and chemistries. Single-use batteries can be removed when they stop working and are commonly found in remote controls, watches, pacemakers, hearing aids, toys and more. Single-use batteries have a different recycling process than

rechargeable and cellphone batteries, so not all recycling locations take them.

Rechargeable batteries may be removable or permanently attached to the device, and are widely accepted at recycling locations. They are commonly found in cordless power tools, phones, laptops, cameras, two-way radios and medical equipment.

Depending on what they're used for, batteries can contain metals such as mercury, lead, cadmium, nickel and silver, which can pose a threat to human health or the environment when improperly managed. They can also start fires even when used and they appear to be discharged.

Damaged or recalled batteries can also be recycled with special kits to keep them safe in transit.

WHERE TO RECYCLE BATTERIES

Each state and municipality has its own recycling rules and regulations, so do some research on the particulars in your area. The rechargeable battery program is funded by battery and battery-powered product manufacturers, Call2Recycle says, but there is no recycling program for single-use batteries, except in Vermont. There may even be a fee, depending on where you live.

Energizer suggests starting with

your town's website on recycling services. Earth911 offers a recycling locator for all types of batteries and Call2Recycle has a network of more than 34,000 local battery recycling centers and drop-off locations for rechargeable batteries.

MANUFACTURERS

You may also be able to recycle batteries through manufacturers. Types of batteries that may qualify for manufacturer buybacks include button cell batteries and silver-oxide batteries.

You may also be able to drop batteries off at stores such as The Home Depot, Lowe's, Office Depot and Staples.

Curbing Water Usage

The average American family uses more than 300 gallons of water every day at home, the Environmental Protection Agency says, and outdoor water use accounts for around 30%.

While the Earth seems to be covered in water, most of that isn't usable for us. It's in the oceans or ice caps, inaccessible. So it's up to us to use what we have wisely.

WATER AT HOME

In our homes, we use most of the water for the toilet, followed by the shower, faucet, clothes washer, leaks and other uses. Check your water bill, not for the amount you owe but for the amount you use, then use the EPA's WaterSense calculator to find ways to lower your usage.

OTHER WATER USAGE

But we also use water in more ways than from our taps. Water is used to grow our food, generate energy, manufacture goods and run our businesses. Thermolectric power used 45% of freshwater withdrawals in 2010, followed by irrigation and other uses.

CONSEQUENCES OF NOT CONSERVING

Managing water is a growing



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concern in American communities. The pipes, canals and pumping stations are aging and struggling to bring a reliable supply of water to American homes. Forty states told the U.S. Government Accountability Office in a 2014 report that they expect water shortages over the next decade that are not related to drought.

Strain on the water supply and systems can lead to higher water prices, water restrictions, seasonal loss of water-related recreational areas, expensive water treatment projects and harm to the natural environment.

WAYS TO CONSERVE

Some ways to curb your

water usage:

- Take shorter showers and partially fill your tub.
- Install water-saving shower heads or flow restrictors.
- Turn off the water while brushing your teeth or shaving. Also while you're washing vegetables or rinsing dishes.
- Check for leaks in your faucets, pipes, couplings and toi-

lets. Even a small drip can waste 50 or more gallons of water per day.

- Water your lawn only when it needs it and deep soak your lawn. Take advantage of the cooler parts of the day to water.

- Use a broom instead of hoses to clean driveways, sidewalks and steps.

Traveling Sustainably

Everyone's heard about how bad air travel is for the environment. But now that the pandemic is waning, you might be itching to get back on the road.

Here are some tips for traveling sustainably.

STICK CLOSE TO HOME

Carbon emissions from the airline industry grew 75% from 1990-2012, the David Suzuki Foundation says. It adds that the aviation sector were a nation, it would be among the top 10 global emitters, responsible for 12% of transportation emissions. A return flight from Montreal to London emits as much carbon emissions as heating a European home for an entire year.

Staying local for your travel means a smaller carbon footprint, even if your trip does include air travel.

KEEP UP THOSE SUSTAINABLE HABITS

Those sustainable habits you do at home, such as turning off lights when not in use and not wasting food? Pack those along with your sunscreen. More hints from Sustainable Jungle are:

Bring your own travel mug or water bottle.

Support the local economy by eating and shopping local-



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ly, staying in eco-friendly accommodation and traveling with local transport providers.

When staying in a hotel, hang up your towels for reuse and decline daily room cleaning. Bring your own toiletries to avoid the single-use bottles they leave for you.

Choose trains and buses over planes when you can, or carpool with others when you can safely do so.

CARBON OFFSET PROGRAMS

If you do have to fly, choose carbon offset programs. These programs allow you to invest in clean energy and carbon reduction efforts in order to offset your own activities. Some programs are pretty simple. Your money goes to plant trees. That's it; that simple.

Sustainable Travel Inter-

national suggests looking for providers that are third-party verified and validated. Organizations should offer advice about how to reduce your carbon footprint and live more sustainably, the site says, and offer transparency about their efforts. Look into how they retire their offsets to make sure your credit isn't resold and double-counted.

It's helpful if the organization is a nonprofit, Sustainable Travel says. Mission-driven organizations often support broader sustainability initiatives and goals. While you're looking at their mission, also look at their experience in carbon offsetting to see that they have the technical expertise and established relationships when it comes to offsetting.