Home & Garden

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Cutting the Climate Impact of Your Air Conditioner

By Gemma Alexander

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Even if you live in a relatively mild climate, thanks to climate change, you probably need an air conditioner. As a consequence of climate change, the frequency and severity of heat waves have increased around the world. Famously cool climates like the Pacific Northwest and England now routinely experiencing record-breaking highs and extended heat waves. And it's not just a matter of comfort – this increase has resulted in tens of thousands of deaths. As temperatures rise, air conditioning is becoming a matter of safety. But it's a vicious cycle because air conditioning is part of the problem of climate change.

Environmental Impacts of AC

Air conditioners consume 3,000 to 5,000 watts of electricity every hour that they run. The climate impact of that will depend on the energy source that provides the electricity. But in a hot climate, it contributes a significant part of a household's total energy consumption. For most Americans, temperature control makes up more than half of home energy use, and air conditioners specifically account for 23% of electricity use in all American buildings. That's about 117 million tons of CO_2 emissions annually.

Air conditioners also contribute directly to climate change by releasing ozone-depleting greenhouse gases. Although current refrigerants are better than freon (which has been phased out of use), they are still red list chemicals. Air conditioners can leak up to 10% of the hydrofluorocarbon (HFC) refrigerants they contain each year. And if we do not properly dispose of old units, the refrigerant may be completely released into the atmosphere.

Cutting AC Use

One of the best ways to reduce the impact of your air conditioner is to simply use it less. When the weather is less extreme, rely on low-tech cooling options. Opening windows and running electric fans will cool rooms by providing ventilation and airflow. Compared to air conditioners, electric fans only use about 100 watts of electricity per hour. Your window treatments can also help counter high temperatures. Help yourself stay cool by dressing for the weather, and even drinking iced tea (or other cooling beverages) can help. Only run the AC on days when the temperature really soars. Even then, then set it to the warmest temperature that you find comfortable – you shouldn't need to wear a sweater because the AC is running.

You can also make more permanent changes to reduce the need for air conditioning. Insulation is not just for winter warmth; it also prevents your home from heating up quickly on a hot day. Sealing air leaks reduces 15% to 25% of heat gain in summer and prevents cool air from escaping when the air conditioner is running. Think outside the house, too. Your landscaping can help keep your home more comfortable by shading walls and roofs and by directing breezes.

Minimizing the Impact of Your AC

A programmable thermostat can automatically optimize the time and temperature settings on your air conditioner so that you don't keep the house too cold when you're away or have to ramp up the AC when you return home. On average, Energy Star-rated thermostats save users 8% on their energy bills and can make an even bigger difference in extreme climates.

Regular maintenance keeps any appliance working efficiently. Clogged air conditioner filters cause the AC to work harder pushing air through them. Regularly cleaning and replacing the filters is an easy and inexpensive way to cut your air conditioner's energy use.

Shopping for a Cooler AC

If your home is small enough, or if you only need to cool one room, a window unit will use less energy than a central air conditioning system, where duct losses account for up to 30% of energy use. A ductless mini-split is even better because it won't lose air through ducts or window gaps. Central cooling becomes the more efficient choice if you need more than two window units. Regardless of whether you buy a room air conditioner or a central cooling unit, look for one that is Energy Star-rated. There is a federal tax credit for Energy Star Most Efficient central AC units.

Central air conditioners require a blower motor, which is usually part of the furnace. A new energy-efficient air conditioner connected to an older furnace blower motor will not perform to its rated efficiency. For the most efficient system, replace your AC and furnace at the same time (or at least close together). If you are ready to replace both systems, consider an air-source heat pump instead. These can replace both your home's heating and cooling systems. Energy Star heat pumps are significantly more efficient than other heating and cooling options and qualify for federal rebates.

Edit

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Energy Wasters: Scare Away Those Vampire Loads

By Gemma Alexander

Gemma Alexander has an M.S. in urban horticulture and a backyard filled with native plants. After working in a genetics laboratory and at a landfill, she now writes about the environment, the arts and family. See more of her writing here.

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