

Home & Garden

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Reducing Your Refrigerator's CO2 Emissions



By [Gemma Alexander](#)

OCT 31, 2022

[appliances](#), [climate impact](#), [CO2-emissions](#), [refrigerators](#), [refrigerators](#)



Your refrigerator is one of the largest appliances in your house, and it runs 24 hours a day. So when you're looking to reduce the carbon footprint from your [household appliances](#), the refrigerator is naturally one of the first places you look. Refrigerators aren't actually the worst emissions offenders in the home – that dubious honor goes to [air conditioners](#) – but refrigerators do generate about 4% of a home's emissions. That's [89 kg CO2/year](#), and it does add up over the lifetime of the appliance.

Refrigerator Impacts

These appliances contribute to climate change in two different ways. First, refrigerators generate greenhouse gas emissions indirectly by using [electricity](#). That amount will vary depending on how much electricity the refrigerator uses and what power source is used to generate the electricity in your home. On average, an old refrigerator uses about 33% more energy than a current [Energy Star](#) fridge.

What Do You Think?

Are you considering moving because of climate change?

- I'm researching my options to decide
- No
- Yes

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Refrigerators also contain refrigerants, which are [red list chemicals](#) with incredibly high global warming potential. These refrigerants generate emissions directly. The amount depends on which type of refrigerant is used and how much of it escapes into the atmosphere. Since the Montreal Protocol banning CFCs took effect, refrigerators typically used R-134a as a refrigerant. [Chlorinated fluorocarbons](#) like R-134a are far less damaging to the [ozone layer](#) than CFCs, but they are not harmless. As of [January 1, 2021](#), R-134a was eliminated from refrigerators in favor of R-600a, which has 200 times less global warming potential.

Refrigerators don't usually leak very much refrigerant. But dumping a refrigerator will eventually release all the refrigerant into the atmosphere. The Responsible Appliance Disposal program has created a [searchable map](#) to find service providers who will capture and safely dispose of old refrigerants.

Food Waste

Because we purchase refrigerators to preserve food, it's counterintuitive to think that they can contribute to food waste. But if your refrigerator is too big, food can be forgotten at the back and spoil. [Food waste](#) contributes about 14% of Americans' household carbon emissions; learning to [store produce properly](#) in your refrigerator may be more important than which refrigerator you buy. Storing open containers in the refrigerator increases moisture levels. That makes the compressor work harder and increases the risk of spoilage.



Don't store open containers of food in the refrigerator as it increases moisture levels, making the compressor work harder. You can also improve your refrigerator's efficiency by setting the temperature a bit higher.

Low-Impact Refrigeration

You can reduce the impact of your refrigerator through regular maintenance and [simple repairs](#). Check the door seal to make sure it's airtight, and if air is escaping, replace it. Use a narrow vacuum attachment and brush to clean the condenser coils and fan every few months. Drain hoses can get clogged and freezer fans can be hindered by ice build-up. Check them when you clean the coils.

You can also [improve your refrigerator's efficiency](#) by setting the temperature a bit higher. Just as many people waste energy by setting their air conditioners too cold, they keep their refrigerators at near-freezing temperatures. A slightly

warmer setting of 37 degrees Fahrenheit is best. Freezers should be set to 0 degrees Fahrenheit. Turn off any extras that use electricity, like ice makers and anti-sweat heaters. Your fridge and freezer will operate most efficiently when they are [about three-quarters full](#).

Where you place the refrigerator in your kitchen can make a difference, too. To ensure proper airflow around the coils, set refrigerators a few inches out from the wall, and don't use the top of the appliance for storage. Don't station the refrigerator next to heat-producing appliances like the oven or dishwasher. And try not to place the refrigerator where it will receive direct sunlight from windows for large parts of the day.

Finally, remember your mom's admonishment to shut the refrigerator door so you don't let the inside warm up.

Better Refrigerators

It is generally more environmentally responsible to use things for as long as possible before replacing them. But there is a point of diminishing returns on old appliances. The Energy Star website has a [savings calculator](#) to help you decide whether to [repair or replace](#) a refrigerator.

When it is time to replace your refrigerator, make sure it is the right size for your family. A common rule of thumb for refrigerator sizing is six cubic feet per person in the household. Bigger refrigerators use more energy, but are more efficient per cubic foot, so it's better to buy one right-sized refrigerator than to keep a spare running in the basement or garage.

If you can get by with a narrow, small-capacity refrigerator, use the [Energy Star Most Efficient](#) list to find your best option. Check Earth911's refrigerator shopping guides for the best [counter-depth](#) or [standard-sized refrigerators](#).

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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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