

A. M. Gener

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Why I'm Not a Fan of Air Conditioning

Despite our love for sunny beach vacations and hot summers, people cannot get enough of keeping cool. With the comfort and convenience they offer, it's no wonder that long with 60% of Canadians, 90% of Americans, plus an increasing percentage in hotter, developing countries, the world is predicted to be using 4 times as many air conditioners as today by 2050. But this chilling statistic will have the opposite effect on the environment due to air conditioning's devastating consequences.



The global stock of air conditioners is predicted to grow to 5.6 billion by 2050.

Majority of air conditioners work in a similar fashion: by moving heat from the inside of your home to the outside. Warmth from the air is absorbed by refrigerants in evaporator coils while cool air is distributed by a fan. The heated refrigerant will change into a vapour, then be exposed to the outdoors by the condenser. Finally, the outdoor air absorbs the heat and the process starts all over again. Thus begins the vicious cycle of climate change: as the planet warms, the demand for air conditioning will rise, only causing the global temperatures to rise further.

The detrimental effects this cycle has on climate change is often overshadowed by the impacts of heating devices, since the negative results are much more inconspicuous. While furnaces burn fossil fuels right before our eyes, the average person may not notice the greenhouse gas emissions created by electricity used to power their air conditioner. Even the very process of transferring heat outside can warm a city by a few degrees all on its own. Levels

of nitrogen oxides, sulfur oxides, and carbon dioxide, which contribute to city smog and acid rain, soar during the Canadian summer from fossil fuel energy.



PET microplastics have been found in honey, beer, sugar, tap water, and especially fish and shellfish.

However, this is not the only way cooling devices harm the environment. Disposing of an air conditioner poses even more issues that also contribute to climate change. Firstly, modern air conditioning systems are typically made out of plastic, which is non-biodegradable and can take up to 1000 years to decompose. Worse still, most polyethylene terephthalate (PET) plastics actually do not decompose at all; they simply break down into pieces smaller than the naked eye can see. These are called microplastics. Microplastics are present in the soil, the water, and are often picked up by wind as well. According to the Plastic Health Coalition, we eat, drink, and breathe microplastics every day, which can have harmful effects on our health, including cellular damage and neurotoxic effects. Microplastics pollute even the most remote places on Earth, not to mention the burning of petroleum used to produce them in the first place, which heavily contributes to our carbon footprint.

The final problem is the cooling agents from air conditioners. When refrigerants leak out into the environment, they release harmful hydrofluorocarbons (HFC) and chlorofluorocarbons (CFC) which are thousands of times better at trapping heat in Earth's atmosphere than carbon dioxide. HFCs and CFCs are now banned in many countries, but some older models of air conditioners still contain them. Canada has yet to design models which do not rely on the use of fluorocarbon-emitting coolants. Tyler Hermanson, a home designer with a Leadership in Energy and Environmental Design designation, noted that "there's not a system I know of commonly available that would have no refrigerant in it at all". He also mentions that the popular

stand-alone window systems still consume huge amounts of energy and utilize dangerous refrigerants. Alternatively, if coolants must be used, methods of safely disposing their chemicals must be implemented to reduce their effects on the ozone layer.

In order to solve the air conditioning problem, it is not enough for just a few people to change their habits. Even in Canada, where much of the country is immersed in frigid winters for half the year, the number of households with A/C systems continue to climb. This needs to be a team effort; climate change affects every living thing on the planet now, and in the future. Mississauga's mayor, Bonnie Crombie, reiterated this idea with the statement, "...We need to work together to achieve results. Adapting to climate change and ensuring environmental sustainability is a complex task that requires the effort and experience of everyone. We cannot do this alone."

So what can be done about the air conditioning problem? An excellent way to start would be to reduce energy consumption by switching off cooling systems when not at home. BC Hydro reported that 40% of surveyed British Columbians still leave their air conditioners on even when away, resulting in huge amounts of wasted electricity. There are also many easy activities that can be implemented within any home. Using fans typically consume less energy than using A/C, and simply adding blinds and shades to windows can keep up to 65% of heat outside.



Trees can reduce the amount of nitrogen oxide released in the air by up to 57%.

Architects can also design smarter structures to combat rising temperatures without sacrificing the environment. Creating a courtyard in the centre or building windows on parallel walls can add natural ventilation. Additionally, growing shrubs and trees on roofs not only reflect light away, but also insulate the building and can improve an area's capacity to cope with climate change by cooling the air through evaporation.

These adjustments may be difficult to a society which has known air conditioning all their life, but we must be willing to adapt and take climate action if we want to create a sustainable world for all living creatures. An immense loss of biodiversity, along with droughts and sickness will plague our future if we continue to neglect our planet. And this future is unacceptable. Little by little, through innovation and perseverance, the current climate crisis can be averted. We just need to start.

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