**What is Global Warming?**

Global warming is the long-term rise in the average temperature of the [Earth](https://en.m.wikipedia.org/wiki/Earth)'s [climate system](https://en.m.wikipedia.org/wiki/Climate_system). It is a major aspect of climate change, and has been demonstrated by direct [temperature measurements](https://en.m.wikipedia.org/wiki/Temperature_measurement) and by measurements of various effects of the warming. The terms *global warming* and *climate change* are often used interchangeably. However, speaking more accurately, *global warming* denotes the mainly human-caused increase in global [surface temperatures](https://en.m.wikipedia.org/wiki/Instrumental_temperature_record) and its projected continuation, but *climate change* includes both *global warming* and its effects, such as changes in precipitation. While there have been prehistoric periods of global warming, many observed changes since the mid-20th century have been unprecedented over decades to millennia.

the phenomenon of increasing average [air](https://www.britannica.com/science/air) [temperatures](https://www.britannica.com/science/temperature) near the surface of [Earth](https://www.britannica.com/place/Earth) over the past one to two centuries. Climate scientists have since the mid-20th century gathered detailed observations of various [weather](https://www.britannica.com/science/weather) phenomena (such as temperatures, [precipitation](https://www.britannica.com/science/precipitation), and storms) and of related influences on [climate](https://www.britannica.com/science/climate-meteorology) (such as [ocean currents](https://www.britannica.com/science/ocean-current) and the atmosphere’s chemical composition). These data indicate that Earth’s [climate](https://www.britannica.com/science/climate-meteorology) has changed over almost every conceivable timescale since the beginning of geologic time and that the influence of [human](https://www.britannica.com/topic/human-being) activities since at least the beginning of the[Industrial Revolution](https://www.britannica.com/event/Industrial-Revolution) has been deeply woven into the very fabric of [climate change](https://www.britannica.com/science/climate-change).

**Reasons of Global Warming:**

* **Water vapor:** The most abundant greenhouse gas, but importantly, it acts as a feedback to the climate. Water vapor increases as the Earth's atmosphere warms, but so does the possibility of clouds and precipitation, making these some of the most important feedback mechanisms to the greenhouse effect.
* **Carbon dioxide (CO2)**: A minor but very important component of the atmosphere, carbon dioxide is released through natural processes such as respiration and volcano eruptions and through human activities such as deforestation, land use changes, and burning fossil fuels. Humans have increased atmospheric CO2 concentration by more than a third since the Industrial Revolution began. This is the most important long-lived "forcing" of climate change.
* **Methane:** A hydrocarbon gas produced both through natural sources and human activities, including the decomposition of wastes in landfills, agriculture, and especially rice cultivation, as well as ruminant digestion and manure management associated with domestic livestock. On a molecule-for-molecule basis, methane is a far more active greenhouse gas than carbon dioxide, but also one which is much less abundant in the atmosphere.
* **Nitrous oxide:** A powerful greenhouse gas produced by soil cultivation practices, especially the use of commercial and organic fertilizers, fossil fuel combustion, nitric acid production, and biomass burning.
* **Chlorofluorocarbons (CFCs):** Synthetic compounds entirely of industrial origin used in a number of applications, but now largely regulated in production and release to the atmosphere by international agreement for their ability to contribute to destruction of the ozone layer. They are also greenhouse gases.

**Causes of Global Warming:**

**Fossil fuels:**

The massive use of fossil fuels is obviously the first source of global warming, as burning coal, oil and gas produces carbon dioxide - the most important greenhouse gas in the atmosphere - as well as nitrous oxide.

**Deforestation:**

The exploitation of forests has a major role in climate change. Trees help regulate the climate by absorbing CO2 from the atmosphere. When they are cut down, this positive effect is lost and the carbon stored in the trees is released into the atmosphere.

**Mining:**

Modern life is highly dependent on the mining and metallurgical industry. Metals and minerals are the raw materials used in the construction, transportation and manufacturing of goods. From extraction to delivery, this market accounts for 5% of all greenhouse gas emissions.

**Waste Disposal:**

like landfills and incineration emit greenhouse and toxic gases - including methane that are released into the atmosphere, soil and waterways, contributing to the increase of the greenhouse effect.

**Intensive Forming:**

Another cause of global warming is intensive farming, not only with the ever-increasing livestock, but also with plant protection products and fertilizers. In fact, cattle and sheep produce large amounts of methane when digesting their food, while fertilizers produce nitrous oxide emissions.

**Over Consumption:**

Finally, overconsumption also plays a major role in climate change. In fact, it is responsible for the overexploitation of natural resources and emissions from international freight transport, which both contributes to global warming.

**Effect:**

The [effects of global warming](https://en.m.wikipedia.org/wiki/Effects_of_global_warming) include [rising sea levels](https://en.m.wikipedia.org/wiki/Sea_level_rise), regional changes in precipitation, more frequent [extreme weather](https://en.m.wikipedia.org/wiki/Extreme_weather) events such as [heat waves](https://en.m.wikipedia.org/wiki/Heat_wave), and [expansion of deserts](https://en.m.wikipedia.org/wiki/Desertification). Surface temperature increases are [greatest in the Arctic](https://en.m.wikipedia.org/wiki/Polar_amplification), which has contributed to the [retreat of glaciers](https://en.m.wikipedia.org/wiki/Retreat_of_glaciers_since_1850), [permafrost](https://en.m.wikipedia.org/wiki/Permafrost), and [sea ice](https://en.m.wikipedia.org/wiki/Sea_ice). Overall, higher temperatures bring more rain and snowfall, but for some regions [droughts](https://en.m.wikipedia.org/wiki/Drought) and [wildfires](https://en.m.wikipedia.org/wiki/Wildfire) increase instead. Climate change threatens to diminish crop yields, harming [food security](https://en.m.wikipedia.org/wiki/Climate_change_and_agriculture), and rising sea levels may flood coastal infrastructure and force the [abandonment](https://en.m.wikipedia.org/wiki/Environmental_migrant) of many coastal cities. Environmental impacts include the [extinction](https://en.m.wikipedia.org/wiki/Extinction_risk_from_global_warming) or relocation of many species as their [ecosystems](https://en.m.wikipedia.org/wiki/Climate_change_and_ecosystems) change, most immediately the environments of [coral reefs](https://en.m.wikipedia.org/wiki/Environmental_issues_with_coral_reefs), [mountains](https://en.m.wikipedia.org/wiki/Montane_ecosystems), and the [Arctic](https://en.m.wikipedia.org/wiki/Climate_change_in_the_Arctic).

**Why global warming is increasing?**

Higher concentrations of carbon dioxide can have a fertilizing effect under optimal growing conditions: 10-20 percent of improved crop productivity over the past century could be the result of the gradual increase in the level of the gas; and crop productivity could increase further, by up to 30 percent, if the concentration of carbon dioxide doubles as foreseen over the next 50 years. It could also offset the damage done to plant growth by other pollutants, and increase the efficiency with which crops use water. Rising temperatures could increase the yield of some plants, while diminishing others. Rainfall could also increase, by about 10 percent, but its distribution and intensity would change; some areas would benefit, others would be harmed, but it is not yet certain which ones.

**Prevention:**

* **Renewable energies**

The first way to prevent climate change is to move away from fossil fuels. What are the alternatives? Renewable energies like solar, wind, biomass and geothermal.

* **Energy & water efficiency**

Producing clean energy is essential, but reducing our consumption of energy and water by using more efficient devices (e.g. LED light bulbs, innovative shower system) is less costly and equally important.

* **Sustainable transportation**

Promoting public transportation, carpooling, but also electric and [**hydrogen mobility**](https://solarimpulse.com/hydrogen-mobility-solutions), can definitely help reduce CO2 emissions and thus fight global warming.

* **Sustainable infrastructure**

In order to reduce the CO2 emissions from buildings - caused by heating, air conditioning, hot water or lighting - it is necessary both to build new low energy buildings, and to renovate the existing constructions.

* **Sustainable agriculture & forest management**

Encouraging better use of natural resources, stopping massive deforestation as well as [**making agriculture greener**](https://solarimpulse.com/sustainable-agriculture-solutions) and more efficient should also be a priority.

* **Responsible consumption & recycling**

Adopting responsible consumption habits is crucial, be it regarding food (particularly meat), clothing, cosmetics or cleaning products. Last but not least, recycling is an absolute necessity for dealing with waste.

**How to minimize Global warming:**

**Change a light**  
Replacing one regular light bulb with a compact fluorescent light bulb will save 150 pounds of carbon dioxide a year.

**Drive less**  
Walk, bike, carpool or take mass transit more often. You'll save one pound of carbon dioxide for every mile you don't drive!

**Recycle more**  
You can save 2,400 pounds of carbon dioxide per year by recycling just half of your household waste.

**Check your tires**  
Keeping your tires inflated properly can improve your gas mileage by more than 3 percent. Every gallon of gasoline saved keeps 20 pounds of carbon dioxide out of the atmosphere.

**Use less hot water**  
It takes a lot of energy to heat water. Use less hot water by taking shorter and cooler showers and washing your clothes in cold or warm instead of hot water (more than 500 pounds of carbon dioxide saved per year).

**Avoid products with a lot of packaging**  
You can save 1,200 pounds of carbon dioxide if you reduce your garbage by 10 percent.

**Adjust your thermostat**  
Moving your thermostat down just 2 degrees in winter and up 2 degrees in summer could save about 2,000 pounds of carbon dioxide a year.

**Plant a tree**  
A single tree will absorb one ton of carbon dioxide over its lifetime.

**Turn off electronic devices**  
Simply turning off your television, DVD player, stereo, and computer, when you're not using them, will save you thousands of pounds of carbon dioxide a year.