



Let's take a look at some of the problems that are occurring.



Melting glaciers
(Federal Democratic Republic of Nepal)
Photo: Institute for Sustainable Energy Policies



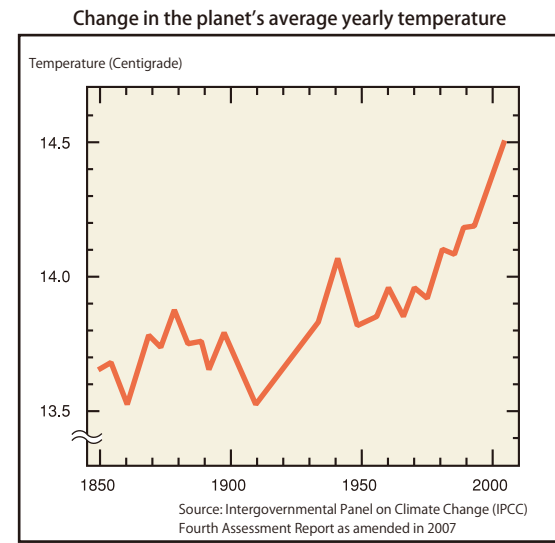
Rising sea levels (Tuvalu)
Photo: Masaaki Nakajima



Hurricane damage (Republic of Honduras)
Photo: AYUda a Centro America (AYUCA), a non-governmental organization (NGO)



Droughts (Burkina Faso)
Photo: Action for Greening Sahel, an NGO



Wow. There is really a lot happening in the world.



Global warming is thought to be a major cause of changes in the earth's environment.

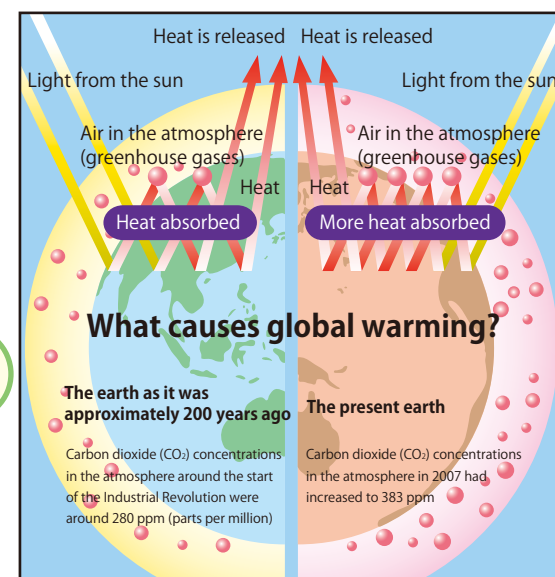


So why do global temperatures keep rising higher and higher?

Greenhouse gases*, such as carbon dioxide (CO₂), that surround the earth have been able to keep in enough of the heat from the sun to keep our planet just the right temperature for life to exist. But people have used too much fossil fuels. This has released so much CO₂ and other greenhouse gases into the air that temperatures around the world have risen. This is what is called global warming or climate change. The cutting down of forests, which absorb CO₂, is also said to cause global warming.

*Greenhouse gases include: carbon dioxide, methane and freon gases.

When carbon dioxide increases so does the planet's temperature!



Source: Japan Center for Climate Change Actions

For more on energy problems see p. 6.
For more on water problems see p. 8.

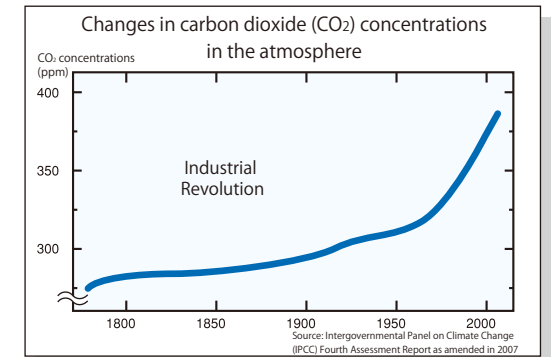


The amount of carbon dioxide released into the atmosphere has continued to increase greatly.

Until the Industrial Revolution happened in the mid 18th century, people's lives were mostly farm-based. Energy came from nature, with the help of cows or horses, or in the form of burning wood, using wind power or water power. The discovery that coal could be used to power the steam engine was made. This more powerful and efficient technology was adopted and applied to the use of production technologies in many sectors. Steam power was seen as a good type of energy and came to be used in many areas. Late in the 19th century, the even more powerful internal combustion engine was invented, and fossil fuels such as oil came to be used.

The Industrial Revolution peaked in the 19th century, dramatically changing the world.

With this, oil and fossil fuels came to be used in great amounts. The burning of coal used in steam engines and oil in the form of gasoline in internal combustion engines resulted in greater emissions of carbon dioxide. This change in energy use and increase in the use of fossil fuels led to a dramatic jump in the release of carbon dioxide.



If global warming continues...

If global warming continues at its current pace, it is said that in 2100 the average global temperature is predicted to rise by a maximum of 6.4 degrees Celsius. What would that mean for our planet?



Experts say that melting glaciers could contribute to a maximum rise of 59 centimeters in sea level. Land at low elevations and close to the sea would disappear under water.



The populations of some endangered animals, such as polar bears, will drop dramatically.



Malaria and other tropical diseases would spread to broader areas.



Insects that harm crops will increase, grain crop yields will decrease and there is fear that this could lead to food shortages.

Source: Intergovernmental Panel on Climate Change (IPCC) Fourth Assessment Report as amended in 2007



I wonder what kind of other problems might occur around the world...?

Acid rain

Caused by exhaust from cars and factories, acid rain can destroy stone structures and sculptures, such as those made with marble and limestone, by dissolving them. It can also kill forests and make lakes and wetlands too acidic for fish and other wildlife to inhabit.

Ozone layer destruction

The ozone layer helps to keep out and protect the earth from the ultraviolet rays that come from the sun. When the ozone layer is destroyed, this allows ultraviolet rays that are damaging to people and wildlife to reach the earth.

Desertification

As desertification progresses, the cultivation of crops will become increasingly difficult and people will not be able to secure as much food. This may force them to abandon their land and search for new places to live.



The number of wild plants and animals are also decreasing. This is also being caused by the overuse of plants and animals as ingredients in medicine and cosmetics. In addition, soil and water pollution are also major issues in many parts of the world.