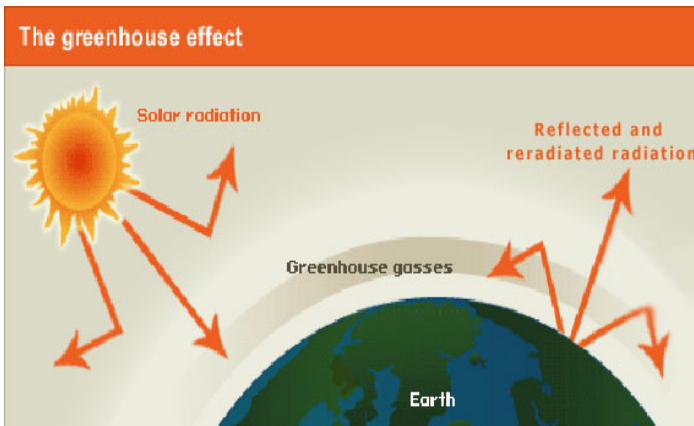


Turning up the heat... climate change and Ohio



Increase in temperatures will melt ice sheets on Greenland and Antarctica which will increase sea levels by as much as six feet.

The greenhouse effect

According to the American Meteorological Society, U.S. National Academy of Sciences, the American Geophysical Union, and many other scientific organizations, human-generated emissions are adding energy to our climate by trapping heat – an enhanced greenhouse effect. Several leading climatologists, and some governments have concluded that the warming of more than 1 degree Celsius risks triggering major climatic change.

Climate change risk

Depletion of Lake Erie

Droughts in the western part of the U.S. means an increase demand for water. Water diversions from Lake Erie may happen more frequently and in larger quantities which deplete the Lake.

The Lake may no longer freeze over each winter, affecting ice fishing (backbone of the winter economy) and businesses that rely on the revenue.

Warmer temperatures will disrupt aquatic life systems.

Glaciers

Glacier melt is occurring faster than scientists anticipated due to rivers running through the glacier, creating more friction and increasing melting speed. Glaciologists are also

The culprits

The major sources of human-generated greenhouse gases include **automobiles, power plants, and diesel engines/ machinery.**

Greenhouse gases, including methane, nitrous oxide, chlorofluorocarbons, ozone, and carbon dioxide (among others) trap the sun's heat and cause warming of the planet.

Power plants emit hundreds of millions of tons of carbon dioxide into the air which prevents the excess heat from escaping earth.

Diesels emit black carbon which settles at the earth's poles and absorbs the sun's rays causing the ice to melt.

Increased flooding

A rise of just a few feet in sea level from letting glaciers will mean coastal communities will be under water. This not only affects the human population, but wreaks havoc upon the wildlife. While some places will experience increase in flooding, others will experience increase in wildfire. Insurance companies will no longer write new home owner policies in these sensitive areas.

Wildlife impacts

Many species of animals are negatively affected by rising temperatures. According to NASA, several bellwether species are dwindling in numbers.

Each species plays a role in the overall health of the ecosystem and a single change could strain or eliminate a species, causing a ripple effect.

Even a slight increase in temperature can devastate populations of animals such as frogs and other amphibians which are hypersensitive to the slightest change in climate.

Polar bears will have to swim farther to reach icebergs, increasing their chances of drowning.

Solutions for a better Ohio...a better world

Ohio is a major greenhouse gas contributor. In 2000 Ohio emitted 287 million tons of carbon dioxide into the atmosphere. However, because of Ohio's large manufacturing base, we can be a leader in climate change technology and deployment.



Bio capture and products

Conservation tillage, bio fuels, and biomass mix (in coal gasification plants) can reduce annual estimated greenhouse gases by over 68 million tons by 2030. To achieve these reductions a state tax credit program for biofuels should be established along with renewable fuel and electricity generation standards.

Electric heating and efficiency

Promoting efficient use of energy in Ohio can have significant decrease in CO₂ emissions. This can be achieved through energy efficient buildings, and by promoting demand-side reduction of electricity and natural gas usage through an energy efficiency resource standard.

Vehicle efficiency

Ohio has a long-standing history of auto manufacturing. By increasing vehicle efficiency, there will be a large reduction in greenhouse gases while reducing our petroleum consumption. Increasing the miles per gallon for cars and light trucks to 40 mpg over the next 10 years would save the US 3 to 4 billion barrels by 2012.

Wind and solar

Wind and solar technologies can have immediate reductions in greenhouse gases. Both are commercially available and deployable. In fact, Ohio is second in the nation for manufacturing of wind turbine components.

Methane

Methane is 23 times stronger than CO₂. Cutting emissions can be achieved by implementing biodigestors and changing cattle feed and processing.

Building greenhouse gas markets

These markets are the buying and selling of credits that represent the reduction or offset of greenhouse gases. Some estimates conclude that over 25 million tons of CO₂ can be eliminated by 2020.

Advanced coal generation and carbon sequestration

Integrated gasification combined cycle with carbon sequestration can reduce CO₂ by at least 90%. This is the process where coal is heated under pressure and becomes a synthetic gas which is then burned in a gas turbine for electricity. Carbon sequestration is the capture of CO₂ and the release of it into a compressor which prepares the gas for injection in geological formations hundreds of feet underground.

To implement IGCC, a geological assessment should be completed along with developing a workforce infrastructure for the gasification and CCS industry.

Cleaner diesel

Diesel produces black carbon which lingers in the atmosphere for days, impacting our climate and our health. This pollution can be reduced through idle reduction programs, pollution controls, and strong federal and state programs.

Read all details of the OEC's global warming study, Ohio Climate Road Map, Part 2 at www.theOEC.org