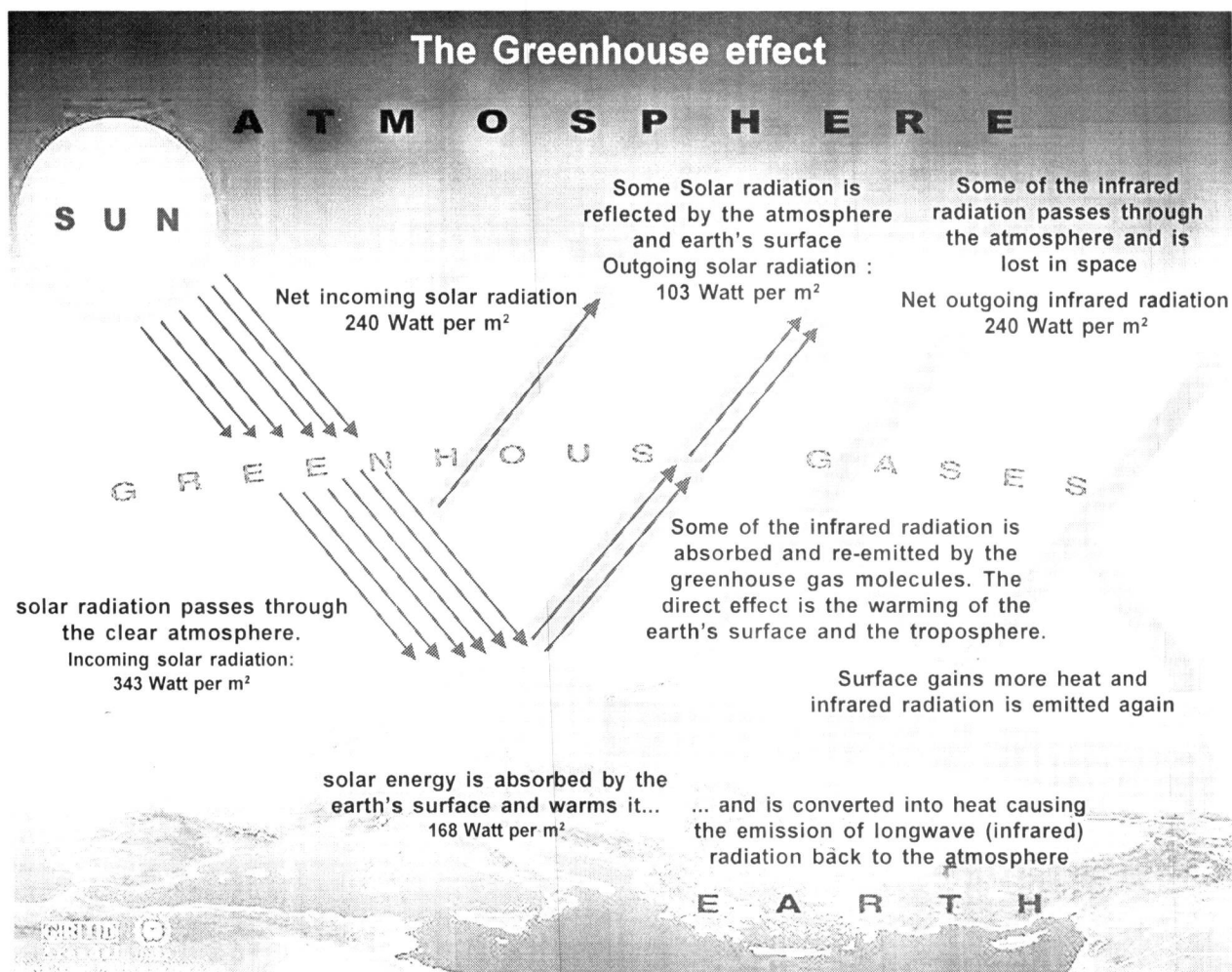


# What is the greenhouse effect?



There are two meanings of the term "greenhouse effect". There is a "natural" greenhouse effect that keeps the Earth's climate warm and habitable. Naturally occurring greenhouse gases include water vapour, carbon dioxide, ozone, methane and nitrous oxide, and together create a natural greenhouse effect.

There is also the "man-made" greenhouse effect, which is the enhancement of Earth's natural greenhouse effect by the addition of greenhouse gases from the burning of fossil fuels (mainly petroleum, coal, and natural gas).

Although greenhouse gases make up only about 1 percent of the Earth's atmosphere, they control our climate by trapping heat and holding it in a kind of warm-air blanket that surrounds the planet. This phenomenon is what scientists call the "greenhouse effect." Without it, scientists estimate that the average temperature on Earth would be colder by approximately 30 degrees Celsius (54 degrees Fahrenheit), far too cold to sustain our current ecosystem.

## How Do Humans Contribute to the Greenhouse Effect?

- **Burning natural gas, coal and oil** — including gasoline for automobile engines— raises the level of carbon dioxide in the atmosphere.
- **Some farming practices and land-use changes** - increase the levels of methane and nitrous oxide.
- **Many factories produce long-lasting industrial gases** - not occur naturally, yet contribute considerably to the enhanced greenhouse effect and "global warming"
- **Deforestation** - Trees use carbon dioxide and give off oxygen in its place, which helps to create the optimal balance of gases in the atmosphere. As more forests are logged for timber or cut down to make way for farming, however, there are fewer trees to perform this critical function.
- **Population growth** is another factor in global warming, because as more people use fossil fuels for heat, transportation,

manufacturing and farming the level of greenhouse gases continues to increase.

Finally, more greenhouse gases means more infrared radiation trapped and held which gradually increases the temperature of the Earth's surface and the air in the lower atmosphere.

During the *entire 20th century*, the average global temperature increased by about 0.6 degrees Celsius (slightly more than 1 degree Fahrenheit). Using computer climate models, scientists estimate that *by the year 2100* the average global temperature will increase by 1.4 degrees to 5.8 degrees Celsius (approximately 2.5 degrees to 10.5 degrees Fahrenheit).

The "greenhouse effect" often gets a bad rap because of its association with global warming, but the truth is we couldn't live without it.

Compiled from: 2008 UNEP/GRID - Arendal & environment.about.com/od/globalwarming/a/greenhouse.htm & www.weatherquestions.com