

adaptation: term for the actions and strategies that aim to reduce the exposure of people and places to climate change's effects. Adaptation may include moving people from areas prone to flooding, implementing regulations such as building codes, developing drought-resistant crops, and taking myriad other steps.

alternative energy: energy sources that are not fossil fuels. Derived from biofuels, solar, wind, geothermal, tidal, or even nuclear power, these sources release few to no greenhouse gas emissions. However, only some alternative energy sources are infinitely renewable, and sources such as nuclear may carry their own adverse effects.

deforestation: the clearing or thinning of forests by people for materials, land-use, medicinal ingredients, farming, paper production, or other non-forest purposes. Deforestation increases greenhouse gas accumulations in the atmosphere because it eliminates trees, which naturally absorb carbon dioxide as they grow, and releases carbon from the soil.

emissions: refers to the amount of greenhouse gases an entity, such as a country or company, produces.

fossil fuels: hydrocarbon energy sources such as oil, coal, or natural gas, that are derived from fossils and other organic matter buried under the earth millions of years ago. Fossil fuels are burned to generate energy, but they come in finite amounts and their production and use emits significant amounts of greenhouse gases.

geo-engineering: term for those actions intending to limit or reverse the effects of climate change, such as by launching particles into the atmosphere to block the sun's rays. Science relating to geo-engineering remains underdeveloped and the idea is controversial.

greenhouse effect: the natural process that keeps the earth at a life-sustaining temperature. Greenhouse gases such as carbon dioxide, methane, nitrous oxide, and others trap the sun's heat in the atmosphere and prevent its escape into space, thereby keeping the earth warm enough for plant, animal, and human life. Over the last several hundred years, however, the increasing

Glossary: Climate Change

concentration of greenhouse gases in the atmosphere due to human activity has trapped more and more heat, causing global warming.

greenhouse gases (GHGs): gases that absorb heat in the atmosphere and re-emit it back toward earth, causing a warming effect. Greenhouse gases include carbon dioxide, methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons, and sulphur hexafluoride. Water vapor and ozone are also greenhouse gases, but unlike the others listed, are not regulated by the United Nations Framework Convention on Climate Change.

industrialization: the process by which the balance of production shifts from agriculture toward manufacturing and industry. Industrialization is typically marked by technological advances and higher standards of living, but also heightened amounts of energy usage.

Industrial Revolution: a transition, beginning in the eighteenth century, from small-scale, largely agricultural economies to more industry-intensive ones. It began in England and extended to other parts of Europe, the United States, and beyond. Propelled by technological advances that enabled vastly more efficient production, this process raised living standards dramatically, but also boosted the use of fossil fuels and, therefore, the emission of greenhouse gases.

Kyoto Protocol: a 1997 agreement reached in Kyoto, Japan, that amended the United Nations Framework Convention on Climate Change. It mandated emissions cuts by thirty-eight developed economies while encouraging (but not requiring) developing countries to follow suit, and it was renewed in 2011 for an additional five years. The Kyoto Protocol was an example of the UN climate principle of “common but differentiated responsibilities,” which acknowledged collective obligation for the planet’s health but emphasized that only developed countries cut emissions.

mitigation: efforts to reduce or prevent emissions of greenhouse gases. Examples of mitigation efforts include increased use of energy-efficient goods and renewable energy sources, and the preservation or replanting of forests.

Glossary: Climate Change

ocean acidification: changes in the ocean's seawater chemistry caused by an increase of atmospheric carbon dioxide, which oceans absorb, altering marine ecosystems and disrupting ocean life.

nationally determined contributions (NDCs): plans submitted by countries party to the Paris Agreement that outline their proposed emissions reductions and adaptation strategies. NDCs can vary widely in their length, specific proposals, and format.

Paris Agreement: a nearly universal international agreement reached in 2015 that requires signatories to offer concrete emissions reductions pledges, establishes rules to monitor their performance against those pledges, and sets up a process to review and increase the ambition of the pledges over time. The Paris Agreement's goal is to limit global warming by 2 degrees Celsius (about 3.6 degrees Fahrenheit) above pre-industrial temperatures.

renewable energy: energy derived from sources such as sunlight, wind, and water, which have a steadily replenishing supply. These sources stand in contrast to fossil fuels, which emit large amounts of greenhouse gases and regenerate only over enormous lengths of time.