ENERGY

glossary

EARTH matters
Studies For Our Global Future

biomass: organic material made from plants and animals that can be burned as a renewable and carbon dioxide neutral source of energy.

biofuels: organic material made from plants and animals, containing energy stored from the sun, which is burned or converted to create fuel. Wood, crops (such as corn and sugar cane), vegetable oils, and animal fats are primary examples.

carbon dioxide (CO_2): a naturally occurring greenhouse gas in the atmosphere, concentrations of which have increased mostly due to human activities, such as the combustion of fossil fuels.

climate change: the regional and global changes in weather patterns and natural phenomena primarily caused by the human use of fossil fuels that releases carbon dioxide and other greenhouse gases into Earth's atmosphere. These changes include increased temperature trends on Earth's surface, sea level rise, sea and glacier ice melting, and extreme weather events.

energy efficiency: technologies and measures that reduce the amount of electricity and/or fuel required to do work, such as powering homes, offices, and industries.

energy poverty: a lack of access to consistent energy services such as household electricity and clean cooking facilities.

fossil fuels: energy resources from the remains of plants and animals; most commonly used are oil, coal, and natural gas. When burned for energy, they create byproducts, such as carbon dioxide and nitrous oxide (greenhouse gases).

geothermal energy: energy obtained from the heat within the Earth.

greenhouse gases (GHGs): gases which allow sunlight to enter the atmosphere freely, then absorb infrared radiation and trap heat in the atmosphere. Common examples include carbon dioxide, methane, nitrous oxide, chlorofluorocarbons, and ozone.

hydraulic fracturing ("fracking"): the process of injecting fluids at high volume and pressure, producing fractures in underground rock formations which stimulates the flow of natural gas or oil. Hydraulic fracturing can create environmental problems including water pollution, air pollution, and strong seismic activity.

hydroelectric power: power generated using falling or fast-flowing water to produce renewable, emissions-free electricity. Most hydroelectric power generation requires blocking waterways with dams, which can negatively affect water quality and freshwater ecosystems as well as displace local human communities.

indoor air pollution: air pollution in and around buildings and structures, often produced by cooking and heating using solid fuels like wood, charcoal, coal, and crop wastes. These practices can produce high levels of smoke containing a variety of health-damaging pollutants such as fine particles and carbon monoxide.

Industrial Revolution: a period in the 18th and 19th centuries during which human society transitioned from an agrarian and handicraft economy to one dominated by industry and machine manufacturing. This process began in Britain and from there spread to other parts of the world. The Industrial Revolution marks a major historical turning point, influencing many aspects of daily life for people around the world and contributing to unprecedented and sustained human population growth.

less developed countries: nations that generally have a less industrialized, more agricultural economy with lower standards of living relative to more developed countries.

nonrenewable energy: energy resources that will be depleted or will not be replenished in a short period of time.

nuclear energy: energy or power produced by nuclear reactions (fusion or fission).

OECD (Organisation for Economic Co-operation and Development): an international forum of 35 member countries whose mission is to promote policies that increase economic and social well-being for people around the world. OECD studies economic and social developments, recommends policy decisions, and then governments implement those recommendations.

Paris Agreement: adopted in 2016, an international agreement that aims to respond to climate change by keeping global temperature rise below 2 degrees Celsius above pre-industrial levels. The agreement also focuses on strengthening countries' abilities to deal with climate change impacts. Nations that signed on develop a country-specific action plan outlining their best efforts to achieve the aims of the agreement.

petroleum: also called crude oil, a liquid fossil fuel extracted from underground deposits that is processed into gasoline and many consumer products. This is a nonrenewable energy resource.

renewable energy: an energy resource such as wind power or solar energy that can keep producing indefinitely without being depleted.

solar photovoltaic (PV) energy: energy produced by converting sunlight directly into electricity.

United Nations Sustainable Development Goals (SDGs): 17 interconnected goals that provide individualized guidelines and targets to help every nation develop sustainably, protecting the planet and ensuring all people enjoy peace and prosperity. The SDGs are meant to build on the Millennium Development Goals (2000 - 2015) and also focus attention on addressing new problems such as climate change, economic inequality, and sustainable consumption among other priorities.

wind energy: power or energy derived from the wind.