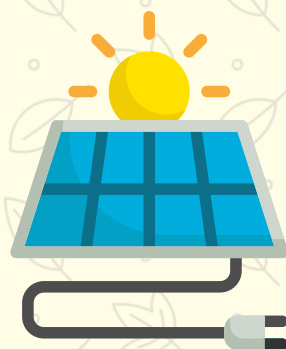


RENEWABLE ENERGY

Solar Energy

Solar energy harnesses the sun's rays using solar panels to generate electricity or heat. It is an abundant and low-emission energy source that can significantly cut electricity bills and reduce carbon footprints. However, its effectiveness is dependent on sunlight availability, and initial installation costs can be high, with panels requiring substantial space.



Wind Power

Wind energy converts the kinetic energy of wind into electricity using turbines. It is a clean and cost-effective power source that supports job creation and reduces greenhouse gas emissions. Nevertheless, wind energy is intermittent, can impact wildlife, and may be seen as visually intrusive or noisy.

Hydroelectric Power

Hydropower generates electricity by using the energy from flowing or falling water to drive turbines. It provides a reliable and stable power supply, helps with flood control and irrigation, and allows for energy storage. However, large-scale projects can disrupt ecosystems, and rely heavily on consistent water availability.



Geothermal Energy

Geothermal energy utilizes heat from beneath the Earth's surface for electricity generation and direct heating. It offers a stable, low-emission, and efficient energy source that is available around the clock. Its application is geographically limited to areas with significant geothermal activity, and the initial costs for development are high.

Biogas

Biomass energy is produced from organic materials like plant and animal waste and can be used for heat, electricity, or biofuels. It helps reduce waste and can be carbon-neutral if managed correctly, while supporting rural economies. However, biomass energy can compete with food production for land use, may cause air pollution, and its efficiency varies depending on the type of biomass used.



NONRENEWABLE ENERGY

Coal Energy

Coal energy is generated by burning coal to produce electricity. It has historically been a major and affordable energy source, fueling industrial growth and providing consistent power. However, it emits high levels of carbon dioxide and pollutants, contributing to climate change and air quality issues, and mining operations can be environmentally damaging.



Oil Energy

Oil energy is derived from crude oil through combustion in engines and power plants. It has driven global transportation and industry for decades, offering high energy density and reliability. The drawbacks include significant greenhouse gas emissions, oil spills, and geopolitical conflicts over oil resources, harm both the environment and international relations.



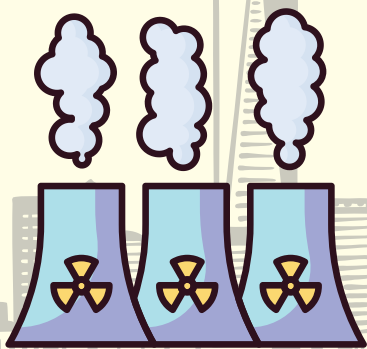
Natural Gas

Natural gas is a fossil fuel that burns cleaner than coal or oil, producing less carbon dioxide and other pollutants. It is used widely for electricity generation, heating, and as an industrial feedstock. Despite its cleaner profile compared to other fossil fuels, natural gas extraction and use still contribute to greenhouse gas emissions and environmental degradation through practices like fracking.



Nuclear Energy

Nuclear energy is produced through nuclear fission reactions in reactors, generating large amounts of electricity with low carbon emissions. It provides a stable and high-output power source that meets large-scale energy demands. However, nuclear energy poses risks such as radioactive waste disposal, potential for catastrophic accidents, and high costs decommissioning.



Peat Energy

Peat energy comes from burning peat, a precursor to coal found in wetlands. It is used in some regions for heating and power generation, particularly where other fuels are scarce. Peat combustion releases significant amounts of carbon dioxide and other pollutants, and peat extraction can damage wetlands and disrupt local ecosystems.

