Energy

Two centuries ago humans harnessed the Earth's energy very indirectly. Wind power was used to sail ships, sunlight was used to grow crops, and manual labor did the rest. Then, in a sudden burst of technological innovation, the Industrial Revolution automated and mechanized the production of almost everything. Giant mechanical looms spun out cloth hundreds of times faster than any human could manually and trains allowed people and cargo to move about more efficiently than anyone had dreamed possible. These new technologies called for higher and more concentrated quantities of energy than could be harnessed indirectly, so humanity began to dig, drill, and mine for fossil fuels to power their new machines and light up the world.

The world now requires more energy production than ever before. Everything in modern life from high-speed telecommunications to trans-continental jets requires enormous amounts of energy. Over 80 percent of the energy consumed in the U.S. is powered by fossil fuels such as petroleum, natural gas, and coal.

Aside from the threat of declining supply, the practice of burning of fossil fuels heavily pollutes the environment and the resulting build-up of carbon dangerously alters the climate. Fortunately, there are alternatives to fossil fuels that do much less harm while still producing the all-important energy the world needs. Often described as "green" technologies, these alternatives are the key to decreasing dependence on oil, gas, and coal. For example, a Stanford University team recently concluded that harnessing just one-fifth of the earth's available wind energy would provide seven times as much electricity as the world currently uses. Combined with use of solar and geothermal sources, these renewable technologies may very well drive a future, clean economy.

By 2040 the world will still get 77% of its energy from the burning of fossil fuels, with a disproportionate increase in demand from the developing nations of the world. By 2040, energy needs will increase by 28%, the increase will stress the Earth's environment and limited resources even further.

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