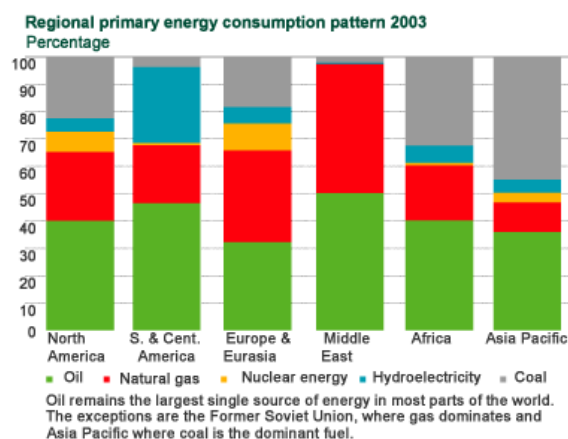


World Energy Use

Global energy use could increase as much as one-and-a-half times by the end of the century, leading to increased CO2 levels. By Suzanne Hall

The Statistics

It is estimated that mankind has used more energy in the last century than it has in the preceding hundred centuries together. In 2001, the annual demand for **primary energy** (total energy consumed, including energy used to produce energy) was 9,100 million tonnes of oil equivalent (mtoe). That's up 80% from an annual 5,000 mtoe in 1970. Put another way, energy demand has nearly doubled in 30 years. By the end of this century, annual demand could be anywhere between 23,000 mtoe and 36,000 mtoe. This is a huge increase, both in absolute terms and relative to consumption in general. In 1990, world energy consumption accounted for one-third of total consumption; in 2050 it will account for two-thirds of total consumption. (An aside to think about: When that figure reaches 100%, machines would be, logically, the only consumers left.)

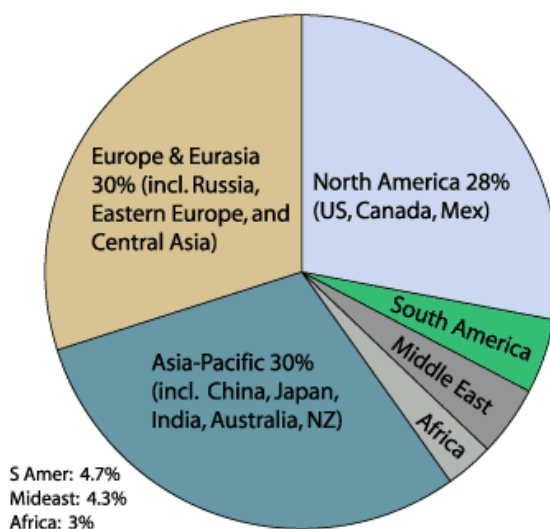


Of the various types of energy sources used, oil is the largest, accounting for about 33%. Gas and coal account for about 25% each. The use of gas has increased since 1970, but coal continues to be the dominant fuel in the Asia-Pacific region. Nuclear and hydroelectricity energy use has increased since

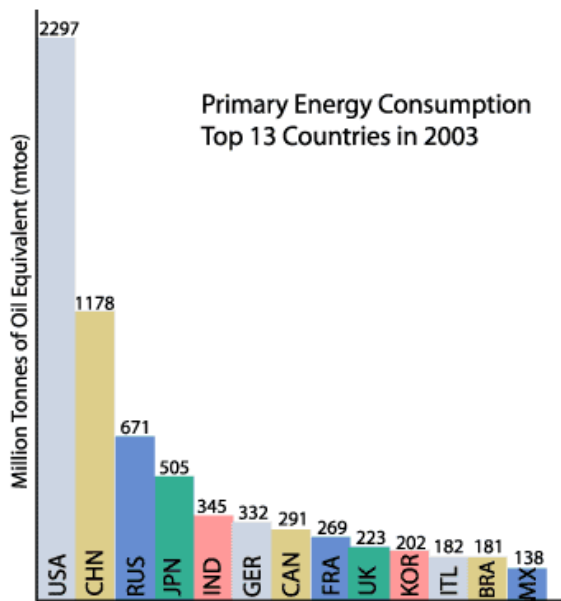
1970, but together account for just some 15% of world energy.

Since 1970, energy consumption has increased 300% in Asia, 50% in North America (USA, Canada, Mexico), and 40% in Europe (mostly due to increased demand in France, Spain, and Italy). The region-wise breakdown for 2001 is given in the piechart below

World Primary Energy Consumption in 2003 (by region)



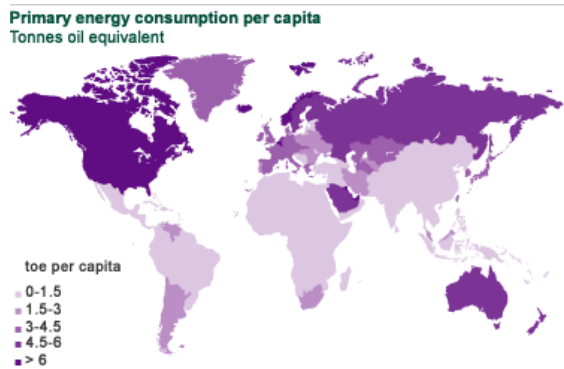
In 2001, North America consumed 29% and Asia 26%. In 2002, due mainly to rapid economic growth in China, Asian consumption was, for the first time, slightly more than that of North America. The 15-member EU consumed 16% in 2001, and that consumption has stayed relatively constant till 2003. In 2003, consumption grew by 2.9%, well above the 10-year trend growth of 1.7% per year. This increase was, as in 2002, heavily influenced by China, where energy consumption for 2003 increased by 14%. Country-wise, US consumption is far higher than that of other countries; it is almost double of China, the next highest consumer (see chart below).



SIDEBARS

Statistics on the Net
 British Petroleum's [Statistical Review](#) appears annually and is an authoritative source of worldwide energy statistics. It includes sections for different energy sources.

The consumption of energy per person is unequally distributed across the world. In the USA, the annual per capita consumption in 2001 was 7.6 tonnes of oil equivalent (toe). In the UK, it was half that at 3.8 toe. In China, it was 0.6 toe, and in Bangladesh 0.09 toe, which is little more than one-hundredth of what the average American consumes. The map below shows per capita energy consumption across the world.



30 August 2004.