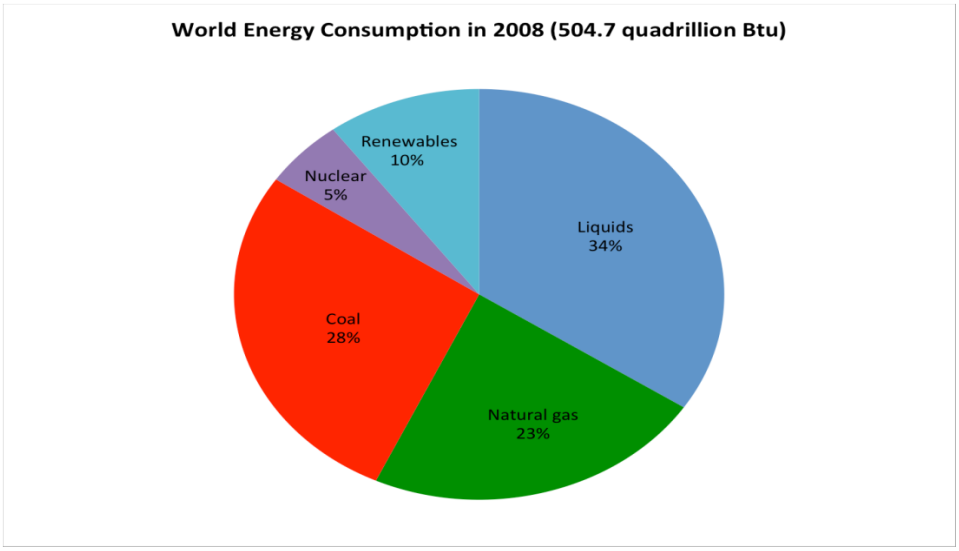
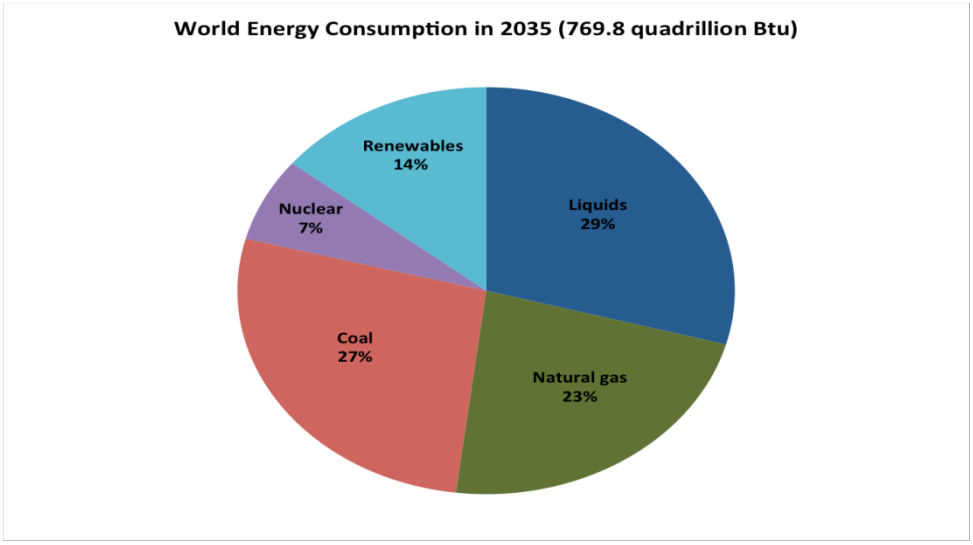
CURRENT AND FUTURE ENERGY SOURCES OF THE WORLD

The World's energy supply sources

The World's energy supply sources for the year 2008 and projected supply for the year 2035 are shown in the figures below.





Three of the world's largest energy sources

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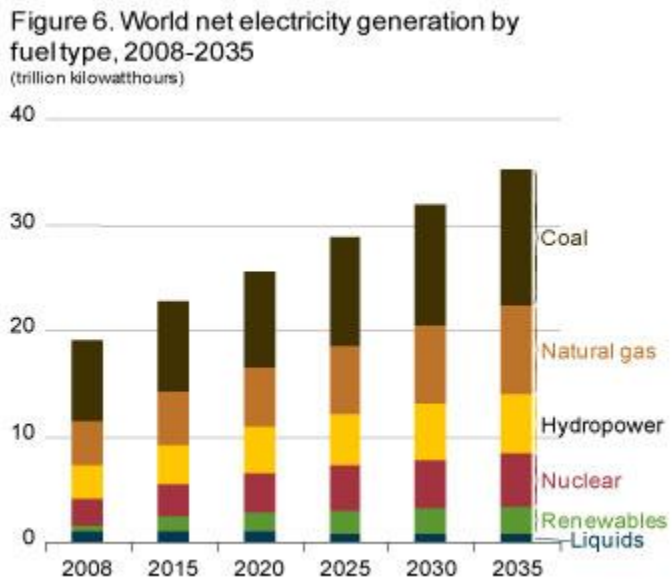
Source	**Future Outlook**	**Advantages / Disadvantages**
Oil	It is the world's foremost source of primary energy consumption, and it is expected to remain in that position throughout the 2008 to 2035 period.	Robust growth in transportation energy use—overwhelmingly fueled by petroleum products—is expected to continue until 2035. As a result, oil is projected to retain its predominance in the global energy mix and meet 29% of the total primary energy consumption in 2035.
Natural Gas	Expected to remain an important supply source for new electric power generation in the future (23% of the total primary energy in 2035).	t is seen as the desired option for electric power, given its relative efficiency and environmental advantages in comparison with other fossil energy sources. Natural gas burns more cleanly than either coal or oil, making it a more attractive choice for countries seeking to reduce greenhouse gas emissions.
Coal	World coal use has been in a	Coal use is projected to increase in all regions

	period of generally slow growth since the 1980s, and that trend is expected to continue through the projection period. Coal use will continue to dramatically increase in developing countries, but in developed or industrialized countries, it will not increase but may slightly decrease.	except for Western Europe, Eastern Europe and the former Soviet Union (excluding Russia), where coal is expected to be displaced by natural gas and, in the case of France, nuclear power, for electric power generation. Large increments in coal use are projected for developing Asia, especially in China and India. World coal consumption increased sharply from 2003 to 2004, largely because of a 17-percent increase in China and India. Coal remains a vital fuel for world's electricity markets and is expected to continue to dominate energy markets in developing Asia.

Electricity

Strong growth in electricity use is expected in the countries of the developing world, where electricity demand increases by an average of 3.5 percent per year compared with a projected average increase of 2.3 percent per year worldwide.

Robust economic growth in many of the developing nations is expected to boost demand for electricity to run newly purchased home appliances for air conditioning, cooking, space and water heating, and refrigeration.



Nuclear Power

Worldwide, electricity generation from nuclear power is projected to increase from from 2.6 trillion kilowatthours in 2008 to 4.9 trillion kilowatthours in 2035.

According to International Energy Outlook (2011) projections by US Department of Energy (US DOE), there is still considerable uncertainty about the future of nuclear power, and a number of issues could slow the development of new nuclear power plants.

Issues related to plant safety, radioactive waste disposal, and proliferation of nuclear materials continues to raise public concerns in many countries and may hinder plans for new installations. Although the long-term implications of the disaster at Japan's Fukushima Daiichi nuclear power plant for world nuclear power development are unknown, Germany, Switzerland, and Italy have already announced plans to phase out or cancel all their existing and future reactors In contrast; developing Asia is poised for a robust expansion of nuclear generation. China, Russia, and India account for the largest increment in world net installed nuclear power from 2008 to 2035.

In a nuclear plant, heat is produced by nuclear fission (splitting of an atom's nucleus into many new atoms) inside uranium fuel. As a result of fission, heat energy is released and the steam spins a turbine generator to produce electricity.

Hydroelectricity

Moderate growth in the world’s consumption of hydroelectricity and other renewable energy resources is projected over the next 24 years, averaging 1.9 percent per year. Much of the projected growth in renewable generation is expected to result from the completion of large hydroelectric facilities in developing countries, particularly in developing Asia.

China, India, and other developing Asian countries are constructing or planning new, large-scale hydroelectric facilities.

Among the industrialized nations, only Canada has plans to construct any sizable hydroelectric projects over the forecast period. Much of the expected increment in renewable energy consumption in the industrialized world is projected to be non-hydropower renewable energy sources, including particularly wind energy in Western Europe and the U. S. In addition, biomass and geothermal energy sources are expected to grow rapidly in the U. S.

In hydroelectricity, mechanical energy from the water being pulled downward by gravity is converted to electrical energy. More specifically, a hydroelectric generator directs the flow of water through a turbine, which extracts the kinetic energy from the movement of the water and turns it into electricity through the rotation of electrical generators.

Source: https://www.e-education.psu.edu/egee102/node/1929