

A World of Energy

Essay Contest

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12/20/2008

RECEIVED JAN 8 2009

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Energy is a prevalent topic in today's world. There is constant concern of where we are to obtain energy, how much we need, and how we are to keep our energy supplies from running out. Energy comes in many fossil forms such as coal, natural gas, petroleum or oil; and renewables such as solar and wind. Our world is currently geared to using fossil fuels and this will continue in the foreseeable future, however, the search for renewable sources of energy has been gaining momentum. The uses that we have for energy are almost endless. The search for and consumption of energy sources are an inescapable reality.

At the end of the Second Quarter in 2008, the U.S. produced 8.75 million barrels of oil per day (U.S. Imports by Country of Origin). The total world production was 85.7 million barrels per day. 3.5 million barrels per day were produced in 1970 by the U.S. Major contributors to the production of oil in the United States include Alaska, Texas, and California (U.S. Imports by Country of Origin). Although Montana is not a major producer, it does have an oil formation, shared with North Dakota, which is quite large. It is The Bakken, a formation covering 200,000 square miles, and its region is the Williston Basin. The greatest production site for the Bakken is located in Richland County, Montana. The number of wells drilling the North Dakota Bakken jumped from 300 in 2006 to 457 in 2007. Those same sources show oil production in the North Dakota Bakken increasing 229%, from 2.2 million barrels in 2006 to 7.4 million barrels in 2007. The Bakken reserve contains a total of 270 million barrels, and in 2007 it was producing 53,000 barrels per day (Bakken Formation). The leading producer of crude oil in the world is Saudi Arabia; in 2007 it produced 10.2 million barrels per day (U.S. Imports by Country of Origin).

Coal Reserves are in almost every country, unlike oil and gas reserves, which are mainly found in the Middle East and Russia. In the year 2007 there was a global production of 5.5 billion tons, in 1990, only 3.5 billion tons were produced (Coal Facts 2008). The leading producer of hard

coal is People's Republic of China. They produced 2.5 billion tons in the year 2007, and the USA with 1 billion tons was second. For the U.S., coal production was at an all time high in 2006, when we produced 1.1 billion tons (Coal). Coal is mined in 27 states; the state producing the most coal is Wyoming, followed by West Virginia, Kentucky, Pennsylvania, and Texas. Coal is mainly found in three large regions, the Appalachian Coal Region, the Interior Coal Region, and Western Coal Region (Coal).

The demand for energy is determined by how fast a country consumes it. The demand for natural gas is extraordinary because of its convenience and the variety of uses it possesses. There are commercial, residential, industrial, and electric generation demands. For residential demand EIA expects an increase of 25% between 2002 and 2025. For the industrial demand EIA estimates an increase at an average rate of 1.2% per year to 2025. For electric generation, demand is predicted by EIA to increase by an average rate of 1.8% per year to 2025 (Annual Energy Outlook 2008 with Projections to 2030).

The U.S. has the greatest worldwide demand for crude oil. On average, the U.S. imports about 13.5 million barrels of petroleum products per week. In 1991, the U.S. imported approximately 6.9 million barrels weekly (Product Supplied). In 2006 the U.S. consumed 1,112.3 million tons of coal. In 1991 the United States consumed only 899.2 million tons of coal. As of October 2008, we have imported 16.6 million tons of coal. (Coal Facts 2008). The majority of coal used in the U.S. is for generating electricity; in fact about 92% is for this use. The majority of coal is used as a basic energy source in many industries, including, steel, cement and paper (Coal).

World-wide demand for energy will be outpacing U.S. demand in the coming years. U.S. energy consumption is projected to increase 0.7% annually over the next 25 years. In other countries that show economic growth, the demand is forecast to be even greater. The projected growth in China is 3.4% annually and in India the growth will be 2.9% annually over the next 25

years (Annual Energy Outlook 2008 with Projections to 2030). This will have a tremendous depleting effect on the global supplies of energy.

Conservation of our resources is extremely important and the people of the world have to understand this because we are going to exhaust supplies at some point. If the world keeps its present coal production rate, the coal reserves will run out in about 133 years. Coal is a nonrenewable energy source; it takes millions of years to create. The consumption of energy annually, per capita, for the United States was 337 million Btu in 2007 (Coal Facts 2008). From 1949-2007 consumption has never been below 210 million Btu, so it would be near impossible for the United States to cut the consumption of energy in half. There would also be a great disruption to the economies of other countries because we would cut back on the importation of energy resources (Coal Facts 2008). To aid in conservation we must be aware of the concept of Peak Oil. Peak Oil is the point in time when global petroleum extraction has reached a maximum rate, production then goes into a terminal decline (Peak Oil).

Energy is one of the most important resources of this world. We must explore new ways to efficiently extract our fossil fuels and utilize our reserves and imports wisely. We also must be vigilant in developing renewable sources of energy in our country to lesson dependence on foreign imports. Energy sources are everywhere and its presence is a blessing we should never forget

Works Cited

- "Annual Energy Outlook 2008 with Projections to 2030." Energy Information Administration. June 2008 <<http://www.eia.doe.gov/oiaf/aeo/issues.html>>
- "Bakken Formation." Wikipedia. December 1, 2008 <http://en.wikipedia.org/wiki/Bakken_formation.html>
- "Coal Facts 2008." World Coal Institute. November 2008 <<http://www.worldcoal.org/coal-info.asp.html>>
- "Coal." Wikipedia. December 18, 2008 <<http://www.wikipedia.org/wiki/coal.html>>
- "Peak Oil." Wikipedia. December 16, 2008 <http://en.wikipedia.org/wiki/Peak_oil>
- "Product Supplied." Energy Information Administration. November 26, 2008 <http://tonto.eia.doe.gov/dnav/pet/pet_cons_psup_dc_nus_mdbl_m.htm>
- "U.S. Imports by Country of Origin." Energy Information Administration. November 26, 2008 <http://www.eia.doe.gov/oil_gas/petroleum/info_glance_petroleum.html>