

The Future of Oil and Gas

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17 December 2008

RECEIVED JAN 7 2009

### What is in Store for the Future?

The United States is the world's largest energy user, with the average American consuming as much energy in one day as a person in one of the poorest countries consumes in a year. In 2004, the United States had 4.6 percent of the world population. In that year, the United States consumed 24 percent of the world's commercial energy ("What's the Problem"). Compare this statistic to India's 16 percent population, and 3 percent consumption of world commercial energy ("What's the Problem"). Obviously this is an issue. The three main points of this paper are supply, demand, and consumption.

Oil, natural gas, and coal together supply over 87 percent of total world energy. This is estimated to be 400 quadrillion British Thermal Units (Btus) per year. Therefore, if the annual amount of fossil fuels declined 2.5 percent, each year for twenty years. The world would have to develop 10 Btus of alternative energy each year to keep up ("Petroleum").

In the world today, Saudi Arabia is the largest producer of oil. They supply 9,817 thousand barrels per day, and consume 1,437 thousand barrels per day. The United States supplies 7,454 thousand barrels per day, and consumes 20,071 thousand barrels per day. Peak oil is also a very big concern for the world today. "In practical and considerably oversimplified terms, this means that if 2005 was the year of global Peak Oil, worldwide oil production in the year 2030 will be the same as it was in 1980 ("Petroleum"). However, the world's population in 2030 will be both much larger (approximately twice) and much more industrialized (oil-dependent) than it was in 1980. Consequently, worldwide demand for oil will outpace worldwide production of oil by a

significant margin. As a result, the price will skyrocket, oil dependant economies will crumble, and resource wars will explode (“Division of Oil and Gas Conservation”). In essence peak oil is not about running out of oil, it is just the peak and the eventual decline in oil production. Peak oil is sending the message that an end is coming to cheap oil. These facts in particular are very distressing because of their catastrophic consequences in the future.

“All the easy oil and gas in the world has pretty much been found. Now comes the harder work in finding and producing oil from more challenging environments and work areas” (“William J. Cummings”). World crude oil demand grew an average of 1.76 percent per year from 1994 to 2006. Demand for oil is projected to increase 37 percent over 2006 levels by 2030. If proven true, levels will rise from 86 million barrels a day to 118 million barrels a day (“What’s the Problem”).

“As countries develop, industry, rapid urbanization, and higher living standards drive up energy use, most often of oil. Thriving economies such as China and India are demanding oil that will outpace worldwide production of oil by a significant margin. As a result, the price will skyrocket, oil dependant economies will crumble, and resource wars will explode” (“Division of Oil and Gas Conservation”).

These countries are quickly becoming large oil consumers. China has seen oil consumption grow by eight percent yearly since 2002. India on the other hand, is expected to more than triple its annual oil import in the next fifteen years. That will raise India’s levels to five million barrels per day (“What’s the Problem”).

There is one main contributing factor on demand: population growth. Oil production per capita peaked in the 1970's. The world's population in 2030 is expected to be double that of 1980. Oil production per capita has declined from 5.26 barrels per year in 1980 to 4.44 barrels per year in 1993. There was a brief increase in 2005 to 4.79, but it decreased again in 2006 to 4.73 barrels per year. Another factor of the growing population is life expectancy. The average person lives 10 to 20 years longer than years before. World population grew by 6.2% from 6.07 billion in 2000 to 6.45 billion in 2005 ("Is the World Supply of Oil and Gas Peaking").

The third important point is the conservation of oil and gas use. The U.S.A uses more energy than any other country in the world. If America was to cut its energy consumption in half, it would still use more energy than any other country. Conservation of oil is a much needed solution for the United States. Some of the many benefits of conserving energy include leaving fewer air pollutants and saving money.

There are some broad alternative energy sources that have been experimented on. Biomass is a renewable energy resource. Biomass uses dead biological material that is converted to biofuel and is used to generate electricity, chemicals, and heat. Geothermal technologies use the earth's stored heat as a renewable energy source. Solar energy uses the sun's light and radiant heat as an energy source. Wind turbines use the wind to generate electricity. Wind energy is plentiful, renewable, and widely distributed. Ocean energy uses renewable solutions, such as marine current power, ocean thermal energy conversion, salinity gradient power, tidal power, and wave power to generate power from the oceans vast waters.

Oil and gas touch our lives in many different ways every day. They fuel our cars, heat our homes, and cook our food. No one is doubting that oil and gas are very important resources throughout the world, but because of air emissions and rising costs, the world, especially the United States, needs to make some major changes in the way that they supply their energy.

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