

The future of energy security

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In the aftermath of 9/11, fears of global oil disruption sent prices up by nearly 30 percent to over \$30 a barrel. During June/July 2004, the price of oil hovered around \$40 a barrel. During September/October the price of oil rose to \$50 a barrel, and the high price will remain for the rest of the year. By December 2005, the price of oil is likely to reach \$80 a barrel. Growing demand of China and India will be the main cause of this price spike.

For decades Saudi Arabia was the most favoured oil supplier to the US. Now American analysts describe the kingdom as politically unstable, anti-western, and undependable as a supplier. Since the invasion of Iraq in March 2002, the US has had been actively courting new oil suppliers in West Africa, the Caspian, and especially Russia, which American hawks now

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For anyone interested in the future of energy, the rivalry between Russia and Saudi Arabia offers a dramatic window into the practical realities and the true priorities of the global energy order. Although such a rivalry to me seems rather insignificant, especially in comparison with such issues as the depletion of world oil or the uncertain future of fuel cells, but what matters now is the question of how high the price of oil will rise and

what that would mean for the world economy.

The obsessive focus on oil is hardly surprising, given the stakes. In the fast moving world of energy politics, oil is not simply a source of world power, but a medium for that power as well, a substance whose huge importance encompasses entire nations in a global web that is sensitive to the smallest of variations.

A single oil event -- a pipeline explosion in Iraq, political unrest in Venezuela, a bellicose exchange

between Russia and Saudi Arabia -- sends shockwaves through the world energy order, pushes prices up or down, and sets off tectonic shifts in global wealth and power.

In the volatile world of oil, the tide could turn quickly. As anxieties over the uncertainties in Iraq drove oil prices up to \$40, the oil tide abruptly changed direction, transferring tens of billions of dollars from the G-8 countries to the oil exporting countries, and threatening the global economic recovery.

So embedded has oil become in today's political and economic spheres that the major Western governments now watch the oil markets as closely as they once watched the spread of communism. This is because six of the last seven global recessions have been preceded by an oil price rise, and fear is growing among economists and policy makers that, in today's growth-dependent and energy-intensive global economy, oil price volatility itself may eventually pose more risks to prosperity and stability and mere survival than terrorism or even war.

In this bleak context, it is easy to understand why powerful and technologically advanced nations such as the US, Japan, and the UK have such an abysmal record when it comes to long-term energy planning or alternative energy. In fact when the major industrial nations speak of energy policy, about energy for the future, or about energy security, they are not talking about depletion curves, fuel cells, or a hydrogen economy. They are also not talking about fuel efficiency or solar power or any of the potentially significant but speculative sources of energy. Rather when they discuss energy security, what they are really talking about is the geopolitics of energy, and specifically the actions, money, and alliances necessary to keep oil flowing steadily and cheaply through the next fiscal quarter.

The geopolitics of oil is vast, complex, and ever-changing, but three elements are of absolute importance. First is the dominant role of the US. Since the earliest days of the oil industry in 1859 (when the price was \$10 a barrel), the US has been the dominant figure, first as the world's largest producer of oil and other energy and now as its largest consumer. Today, one out of every four barrels of oil produced in the world is used in the US, and this enormous and constantly growing appetite for energy exerts a ceaseless pull on the rest of the world's oil players and on the shape of the world political order.

Such heavy dependence on foreign oil makes the US vulnerable to disruptions in supply and (according to President Bush) to energy "blackmail" and has, in addition, fostered a long tradition (since 1914) of doing whatever is necessary, covertly or overtly, to ensure that the US -- and US oil

companies -- have access to world oil supplies.

However, the sheer content of the US's demand, coupled with the country's over production (number 3 oil producer) gives the US a degree of influence over world oil markets and world oil politics that goes well beyond anything the US might achieve militarily. The US is not only the biggest oil market in the world, but was the fastest-growing economy in the 1990s, when US oil imports grew by 3.5 million barrels a day, more than the total oil consumption of any country except China and Japan. The trend has continued in the first decade of the new millennium.

The second factor of the geopolitics of oil is the oil in the Middle East. Although the depletion debate has focused mainly on OPEC oil, oil geopolitics are concerned just as much with OPEC oil and mainly with Saudi Arabia. The kingdom possesses about 265 billion barrels of oil, more than a quarter of the world's known reserves.

The third and final factor in the geopolitics of oil is price. If the US and its huge market determine who is in, and who is not, in oil geopolitics, and if the Saudis are the market enforcers, the price of oil is the impulse, the electrical charge that sets the entire geopolitical machine in motion. Price determines the direction and rate of flow of international money and political influence. Price dictates how fast or slow economies will grow, or recoveries will take. Price also controls the amount of energy to conserve or develop new sources.

Because price is so critical, players are forever seeking to manipulate it. Big importers like the US and Europe, whose economies are built on cheap oil, will do anything they can to keep prices on the low side and will routinely bring diplomatic pressure to bear on OPEC when prices get too high. The US will also pressure OPEC when oil prices are too low, because low prices would naturally hurt US oil companies and would destabilise oil revenue dependent US allies like Mexico.

Under current trends the demand for energy is growing so fast that it will double by 2035. But one must realise that energy security goes well beyond mere questions of supply. No matter how much oil or gas is found, it is not very useful unless there is in place the physical infrastructure, the political stability, and the financial and technological resources to get it to those who can pay for it.

China's fastest growing energy market is for electricity. During 2003, power consumption in China jumped to about 20 percent, almost about 5 times the amount Western analysts had predicted. As a result, gas, which currently supplies just 3 percent of China's total energy is expected to provide only 6 percent

by 2010 and perhaps 12 percent by 2020, compared with a 25 to 30 percent share in the rest of the industrial world. China possesses only small gas reserves of its own - just 1 percent of the world's proven reserves -- and most of these are located in the nation's central and western regions, far from the big markets in the east.

What is truly alarming is that despite all the new growth in power usage and in construction of power plant, China's per-capita consumption of electricity is still less than a tenth of the average for industrialised countries. To meet its demand for electricity, China must build as many as sixty 400-megawatt electric power plants every year for the next decade. What this suggests is not only that China still suffers from chronic energy poverty, but that once China starts to lift itself out of that poverty and begins to approach a Western level of energy needs, it will exceed the capacity of any global system that currently exists.

Over the next three decades, according to the International Energy Agency, the oil industry alone will need to invest \$1.7 trillion simply to maintain its current production levels. That is, to find new oil fields fast enough to replace those now in decline or likely to decline. On top of that, oil companies will need to invest an additional \$600 billion to meet all the new demands, especially from booming Asia, particularly China and India. Taken together, that means \$2.2 trillion in oil investment, and it is not at all clear where it will come from.

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How far Western powers will go to protect their access to oil is impossible to predict, but energy security is likely to emerge as the newest pretext for geopolitical conflict. Both gulf wars were in large part campaigns to defend the energy security for the entire industrial world, even if they were led by the US and served primarily US interests.

Energy security, always a critical mission for any nation, will steadily acquire greater urgency and priority. And in the process international tension and the risk of conflict will rise, and these growing threats will make it increasingly difficult for governments to focus on longer-term challenges, such as climate and alternative fuel. This is the ultimate dilemma of energy security in the modern energy system. The more obvious it becomes that an oil-dominated energy economy is inherently insecure, the harder it becomes to move on to an alternative energy system.

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All health information to keep you up to date

Hello, stop giving mobiles to your kids

A recent study carried out by scientists in Finland suggested radiation from mobile phone causes changes in the brain. This is the first time that researchers have looked at the effects of mobile phone on human cells rather than those of rats. It is also alarming that use of mobile phones by our youngsters has increased sharply in the last few years. Although evidence that radiation poses a health risk is inconclusive, researchers have raised concerns about the possibility of a link with headaches, memory loss, irregular brain activity and brain cancer. As well scientists cannot dismiss possible links with other illnesses such as eye cancer and leukemia. It became sensational news that a 34-year-old US brain tumour victim issued a writ to a mobile telephone company for £600m damages.

Noise exposed trauma causing nerve deafness occurs more easily in children. Since a child's ear drum is more susceptible and the mobile is closer to the head, more radiation can damage a child's ear. Through the ear this harmful radiation can go to the brain. Youngsters absorb up to 50 percent more radiation in their brains than adults when they use mobile phones, another research has revealed. Radiation penetrates halfway through the brain of a five-year-old. The penetration falls to 30 percent for a 10-year-old, compared with just a small area around the ear in an adult. This research was carried out at the University of Utah. Some results suggest international safety tests used to measure the absorption of radiation are inadequate and should be changed to take account of the size and thickness of a child's skull. In fact before all these above results, German parents have been urged to stop children using mobile phones over radiation fears. In 2000, a high-level panel appointed by the U.K. government recommended that children be discouraged from using mobile phones and that the mobile phone industry not market to children. In May 2001 the British Medical Association produced a report called "Mobile Phones and Health" which included this statement: "...since the handset is normally held near to waist level for this activity, research is necessary into whether mobile phone radiation may effect different parts of the body in different ways, and hence whether there are any additional possible health risks associated with text messaging."

It's now predicted that by 2005 a quarter of the world's population will own a cellular phone. It may be true that millions of people are getting benefits from this modern cellular technology; but most users are unaware that they are getting exposed to invisible non-ionized radiation that invites multiple health hazards. Unfortunately we have no specific figures for the number of mobile phones owned by different age categories in Bangladesh. Ministry of Health should issue warnings that users under 16 should limit calls to essential purposes and keep them as short as possible. Our government can also urge mobile phone companies and importers not to target children in advertising and to print the radiation level on the handset. Also the Ministry of Environment can print 'mobile phone safety leaflets' for distribution in offices, educational institutes, markets and mobile phone shops. Keep calling but call safely.

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