The Strategic Picture of Oil and U.S. Energy Policy Recommendations for the Next Decade

Karen Timmerman IR 334 Politics of Oil Professor Henri Barkey

The Next 10 Years

In the next decade, the world will see great changes in the strategic picture of oil. World petroleum demand will increase with consumption as countries with emerging markets use oil to fuel their growing economies, though this demand will be slightly lessened as alternative energy options are explored and efficiency improves. Supply will narrowly keep up with demand as new sources of oil are discovered or become available, while the potential for disruption of world oil flows, especially in the Middle East, may take millions of barrels a day off of the market. The shift in the past century from international oil companies to state-owned oil company dominance will either encourage greater transparency in the coming decade in an effort to promote efficient budgeting and good governance or cause economic damage and interfere with production as states succumb to the resource curse. Finally, the world will see an increase in environmental damage related to the exploitation and use of oil that if not checked, may have the potential to disrupt oil production and bring supply down.

In light of what the future strategic picture of oil will resemble over the next decade, I propose an energy policy for the United States that focuses primarily on the innovation and implementation of alternative forms of energy in several sectors, especially transportation, to fulfill our goal of reducing oil consumption by 10% over the next 10 years. Efforts must also be placed upon maximizing extraction capacity from the oil shale in the Western U.S. that could provide a buffer against high oil prices. The next concern of the United States is the management of global risks that could interrupt supply and demand, especially in the Middle East. Finally, the United States must encourage global transparency for both international and state-owned oil companies through international organizations in an effort to promote budgeting and good governance, which may help to prevent domestic issues that have the potential to disrupt a countries' oil production.

DEMAND

Biggest increase in demand will be from nations relying on oil to sustain rapid economic growth. In these countries, especially for non-OECD members such as China & India, there is a rising demand for oil imports as domestic consumption surpasses supply.

Emerging Economies

China

Went from consuming 4766 thousand b/d in 2000 to 9057 th b/d in 2011.

Low in hydrocarbons itself, becoming a net importer in 1993, China has arranged many production deals in countries such as Iran, Sudan, & Venezuela to ensure a steady supply.

India

From 2000 to 2009, imports almost doubled to 2.2 mb/d, and was the world's 4th-largest consumer in 2011.

Others

Increase in oil consumption in other emerging and developing countries such as Brazil, Argentina, & Pakistan.

In the aftermath of the 2011 earthquake & subsequent Fukushima meltdown, 31% of total Japanese refinery capacity was lost. Japan must import an additional 280,000 b/d, a 6% increase in imports, to make up for gap left in electricity generation capacity by nuclear energy.

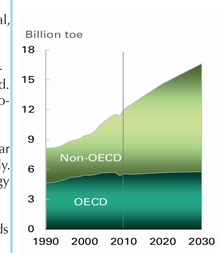
Alternative Energy & Increased Efficiency

Increase in solar, wind, biomass, nuclear, geothermal, & electric power.

China & India will play a large role in the development of alternative energy, especially solar and wind. Indian National Solar Mission was established to produce 20gw of solar energy by 2020.

China is currently the world's largest provider of solar panels, but is selling them at a loss due to oversupply. It must constantly be innovating solar cell technology in order to lower costs & increase efficiency.

The U.S. & energy industry revert only 0.3% of funds towards new technologies.




http://frenchlones.files.wordpress.com/2009/11

SUPPLY

Supply will narrowly keep up with demand as new sources of oil are discovered while potential disruptions interrupt oil flow.

Potential Disruptions

Iran is integral to the strategic picture of oil in the next 10 years as it has the third largest reserves and is the fourth largest oil producer in the world. In addition to its high supply, Iran also controls the Strait of Hormuz, which is responsible for transiting 40% of the world's through sea oil supply.

Countries suffering from the resource curse have the potential to be overcome with domestic upheaval as populations revolt due to corrupt use of oil revenues. Nigeria is one such case: a recent CFR report found that in 2003, 70% of oil revenues were stolen or wasted. Militant groups such as MEND engage in kidnapping of foreign oil workers and oil bunkering.

Despite have an estimated 2.5 billion barrels in reserves in 2011, Syria hit its production peak in 1996 at 582,000 b/d, and in 2010 was only producing 400,000 b/d.

Current conflict between Sudan & South Sudan have resulted in the bombings of oilfields in the latter, resulting not only in production losses but massive environmental damage as the oil flows unchecked.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New Producers

Following nearly 9 years of U.S. occupation, Iraq is poised to become a major player. Iraq's reserves as of 2010 were at 8.3% of the world total, yet the country only had a 3.1% share in production at about 2.5 million b/d due to the U.S. occupation. In March of 2012 it was reported that Iraq was exporting 71.8 mb/d. This is marked improvement, but the government is still on shakey ground during this transition period.

A projected 800 billion barrels of oil can be found in the Green River Formation in the U.S., which covers Colorado, Wyoming, and Utah. However, it could take up to 16 yrs to develop technology needed to reach full production capacity at 3mb/d.

Tar sands in Alberta, Canada and along the Orinoco Belt in Venezuela has estimated reserves of 1.7 trillion and 513 billion barrels, respectively. In Canada 1.2mb/d extracted in 2006, predicted to rise to 2.2mb/d by 2015. Canada is hindered by shortages of natural gas & water, needed for extraction process, and public obstruction due to environmental damage.

ENVIRONMENTAL CONSEQUENCES

Environmental impacts from mining shale oil include acid drainage, exposure of metals such as mercury into groundwater, and increased air pollution.

Air quality will suffer in cities and heavily populated areas unless steps are taken to reduce emissions

In conflicted regions, such as the Niger Delta, attacks by militants and civil unrest can inflict environmental damage. In 2010 Royal Dutch Shell reported nearly 14,000 tons of crude being spilled due to attacks from militants and thieves.


http://www.banktrack.org/site2008/assets/pictures/os8.JPG

Recommended U.S. Policy

DEVELOPMENT & APPLICATION OF ALTERNATIVE ENERGY TECHNOLOGIES

R&D

Main area of interest is investment in R&D of clean, efficient, & sustainable energy technology. In order to cut oil consumption by 25% & lower greenhouse gas emissions, the IEA recommended ave. global spending of $50-100 billion investing in new technologies.

U.S. must not only domestically encourage R&D but also begin to collaborate internationally, allowing for greater innovation as each country will bring in different ideas to form stronger development programs.

Market mechanisms for pollution control, such as cap and trade emissions & tax credits for clean energy use, will encourage both innovation and a switch to sustainable power.


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Transportation

The transportation sector in the United States currently accounts for 70% of oil consumed at 14 million b/d.

New CAFE standards for vehicle fleets call for an average of 54.5 mpg to be reached by 2025, hitting 35.5 mpg by 2016.

Impose a system of indirect tax incentives based on fuel, efficiency, & emissions of individual vehicle while directly taxing gasoline. This encourages hybrid car purchasing & public transportation use.

Follow lead of European countries such as U.K. & Paris by charging for vehicle admittance in cities and providing free bicycles. Require federal & commercial fleet to use only hybrid vehicles that meet efficiency & emissions standards.

Invest in electrification of public transportation and improve train routes across the country to reduce driving.


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Agriculture

Often overlooked in terms of oil dependence, yet petroleum is integral to food manufacturing process from the moment the seed is planted to consumption. Oil products are even found in pesticides & fertilizers used to increase average crop yield in over-farmed soil.

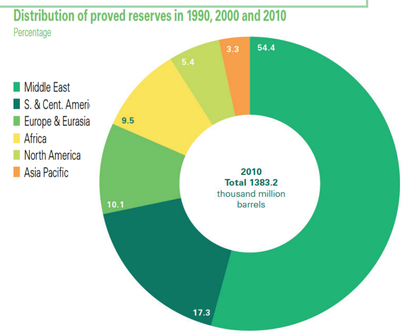
Invest in developing alternative fuels for food manufacturing process, as well as encourage more local & organic growth.


http://www.kennettvillage.co.uk/Kennett%20Aerial%20View3%20copy.j

MANAGE GLOBAL ISSUES & RISKS

In 2010, the U.S. depended on the Persian Gulf region for 18% of its petroleum imports and the bodies of water & pipelines in the region have been integral to the flow of oil to world markets. With OPEC operating at 99% of its total oil productive capacity since 2006, any major disruption in the area could prove disastrous for oil prices. Following withdrawal from Iraq, the U.S. should continue to offer advice & provide help to the newly formed government in order to assure future steady Iraqi oil production. In addition, the U.S. should keep a presence in the Middle East to ensure stability in the oil-rich region.

The U.S. should seek to improve relations with China. Collaboration on R&D of new energy technologies will serve to bring the countries together & allow for the U.S. to



ENCOURAGE TRANSPARENCY

The U.S. should encourage transparency among all oil producing nations and international and state-owned oil companies. This will serve to promote better budget transparency, especially for governments who exhibit rent-seeking behavior that has been damaging to their economies.

May be difficult to implement worldwide; the U.S. could attempt to form a regional group among North & South American countries in order to develop more cost-effective methods of oil extraction & transit. In addition, rather than continue to rely on manufacturing in the Far East for which oil accounts for half of the shipping costs, the U.S. could outsource work closer to home.