

ENERGY – SOURCES, COSTS and CONTROVERSIES

Stephen L. Bakke, July 2008

Contents	Page
Background	1
Commentary	2
<i>Energy Cost and Availability</i>	2
<i>More About the Oil Companies, Taxation and Legislation</i>	6
<i>How About the Nuclear Controversy?</i>	8
<i>Arctic National Wildlife Refuge (ANWR)</i>	10
<i>Alternative Energy Sources</i>	12
<i>My Opinion</i>	14
Sources of Information	15
<i>Books</i>	15
<i>Writers, Columnists, etc, Whose Material Was Used</i>	16
<i>Papers, Pamphlets, and Studies</i>	16
<i>Websites and Online Newsletters or Publications</i>	17

Background

Energy and all things related are just about the most discussed topics in recent months and years. Due to the strong emotion in any discussion of the topic, it lends itself to “demagoguery” through exaggeration or even misinformation. I chose this topic due to my relative ignorance and extreme curiosity. I believe these issues are too important to approach impetuously because they are too complex – and the implications are too important to be left to only politicians and environmentalists.

Here are my intentions for this presentation:

- I have tried to make my biases obvious.
- My disagreement does not result in excluding a topic.
- The “Common Assertions or Impressions” presented have been independently expressed by third parties and are not my invention. I have used paraphrasing in an attempt at brevity. Virtually all of these can be found, stated or strongly implied, in the independent / external sources listed at the end of the report.
- The “Common Assertions or Impressions” are just that – common. They may not reflect the majority opinion.
- The “Competing Information” presented is summarized from the independent / external sources listed at the end of the report, and are not my invention.
- Neither the “Common Assertions or Impressions” nor the “Competing Information” should be presumed to be correct, but I believe the credibility of the sources makes the positions and comments relevant for evaluating the issue.

- If a comment contains some of my personal opinion, I believe that will be obvious. Virtually all of the opinions and information originated separate from me – even if it becomes obvious I agree with some of them.

The following information is not intended to be exhaustive. It is intended to help me have a more complete understanding about the topic, and to have more focused, informed, and credible discussions about it.

Commentary

Energy Cost and Availability

- *Common Assertion or Impression:* “Big oil companies” are the main cause of the high cost of gasoline. Oil company profits are unusually high. The increasing profits from recent years clearly reside in the “coffers” of these oil companies.

Competing Information: Oil company profits have surged in recent years but the increase should be put in context. Local, state and federal taxes paid “at the pump” are several hundred percent larger than the “after tax profit” going to the oil companies. The level of oil company net income, as a percentage of sales was 8.3% for 2007 – and is even lower early in 2008. This percentage is not high for industrial companies. The average gross margin on sales is also not unusual.

I analyzed the financial statements of Exxon Mobil Corp., which I understand to be the most profitable of the oil companies. Some facts are presented here (amounts and percentages are rounded): gross margins increased, as a percentage of sales, by 3% from ‘04 to ‘07; income tax expense, as a percentage of pre-tax income, increased from 38% in ‘04 to 42% in ‘07; after tax net income rose from 9% in ‘04 to 11% in ‘07, as a percentage of gross revenue; during the same time period, reinvestment in property plant and equipment was \$57 billion compared to net profits of \$140 billion – i.e. 40% of net profit was invested in the Company’s future, and this excludes much of the exploration investments which, for the industry as a whole, amounted to a large majority of combined net profits.

Some interesting information from the Tax Foundation: since 1981, the oil industry has earned a cumulative \$1.2 trillion in profits after taxes – but paid a cumulative \$1.65 trillion in U.S. taxes plus approximately another .5 trillion in foreign taxes; for most of the 25 years from 1981 through 2006, federal, state, and local government tax payments were double the profits in those years; and looking at Exxon Mobile’s taxes for just the last quarter, taxes exceeded the profits after taxes by almost 300%. Who benefits from oil company success? In addition to the oil companies, let’s not forget the big winner – our tax system!

One important additional point: If gas prices were rolled back by just 10%, and if that reduction was imposed entirely on the oil companies, virtually all corporate profits would disappear. So the bulk of the problem does not reside there.

- *Common Assertion or Impression:* Repeating and expanding on the last point: “Big oil companies” are the main cause of the high cost of gasoline.

Competing Information: When did we forget about considering the effects of supply and demand which are mentioned elsewhere in this report? We must consider the facts that the large majority of our offshore and land-based deposits are virtually off limits, the value of the dollar is sinking, the energy demand from developing countries is accelerating, and U.S. oil production has gone down 40% since '85 while our consumption has grown by 30%. Add these up and we see the real cause – the impact of world-wide supply and demand.

It is an irresponsible distraction to point and wave such a “large finger” at oil companies. They have contributed to the price increase, but only part of it. Some interesting ironies have been documented. For example, list politicians who have done the most to reduce supply by restricting drilling, preventing refining expansion and blocking expanded use of nuclear power. Make another list of the politicians who express the greatest outrage about high energy prices and start pointing fingers of blame. The lists will be very similar.

- *Common Assertion or Impression:* Speculators are to blame for high oil prices.

Competing Information: Speculating and futures trading is a tradition in all commodities markets. This is a little understood activity – perhaps least of all by me. However, while sometimes inaccurate assumptions about future oil supplies do affect the oil prices, it is truly supply and demand that ultimately influences prices. Sometimes the activities of these “speculators” do cause volatility – no market is perfect. More often the futures markets provide the buyers of commodities a dependable price and supply of a crucial resource for their business. As often as it causes volatility, it actually reduces wild fluctuations and provides more certainty as to prices. Volatility is the result of confusion and uncertainty – often due to government involvement, and very little else.

Pursuing speculators as the culprit would likely be a significant waste of time. Recent proposed legislation to further regulate “speculators” in the futures markets would introduce genuine distortions to the oil market and make life even more difficult for oil consumers who are quite reasonably using the futures market as a hedge against higher prices. This is an example of the law of unintended consequences as it relates to so much of our enacted legislation. It is an imperfect system but most likely better than the government imposed alternative.

- *Common Assertion or Impression:* We are running out of oil fast.

Competing Information: We are outstripping the current production capacity but the possibility of significant energy from untapped resources is immense: coal and “coal to gas” production; known but untapped natural gas reserves; oil shale exploration; ANWR oil potential; oil off our east and west coasts, and the Gulf of Mexico; the Bakken formation in the northern U.S. and Canada. And increasing our use of nuclear power makes all of these even more attractive and improves their potential longevity.

Considering just the Bakken formation oil deposit in North Dakota, one estimate is that it has over 4 billion barrels of oil available using current technology. Some real optimists state that it could even be greater – perhaps the largest single oil find in U.S. history – and possibly largest in the world if drilling technology advances. The Energy Information Administration estimates the reserves at over 500 billion barrels – but technology would have to advance to access it. One estimate pegs the ultimate cost per barrel, without major technology advances, at just \$16. While this deposit was discovered over 50 years ago, its characteristics originally made it impossible to extract. Applying today’s techniques, such as horizontal drilling, the “Bakken” shale oil can be extracted relatively cheaply.

It is estimated that beneath America’s coast lies enough oil to fuel 60 million cars in the U.S. for 60 years and enough natural gas to heat 60 million homes for 160 years. If allowed access to American oil reserves in Alaska and off our coastline, American oil companies could increase our country’s reserves an estimated fivefold, taking the United States from 11th place to 4th among the countries with proven oil reserves. Some estimate the oil deposits on the outer continental shelf is 86 billion barrels, nearly four times our proven reserves.

The potential in just the shale oil reserves in Colorado, Utah, and Wyoming is estimated by some to be 800 billion barrels – more than the proven reserves of the rest of the world – or more than a century worth or projected oil imports. There are some estimates that are more than double this amount.

Recent discoveries in the Arctic have produced estimates of reserves adequate to meet world demand for three years.

Our untapped natural gas reserves have staggering energy potential.

- *Common Assertion or Impression:* Politicians can make a meaningful difference in the cost of energy.

Competing Information: Progress can’t realistically be made simply by blaming the oil companies, suing OPEC, and giving lip service to developing new alternative sources of energy, most significantly corn ethanol. The simple fact is that worldwide oil demand exceeds the supply which is approximately 85 million barrels of oil a day. This production has not increased for several years. The increasing demand comes significantly from developing third world countries.

Legislation in the U.S. has prevented any increase in refinery capacity in 30 years (in fact it has reduced) and 85% of our potential oil and gas exploration areas are declared off limits to exploration. And our nuclear power capacity has been effectively blocked for several decades.

Dependable alternative energy sources are a worthy objective in the long term, but the reality is that if reduced energy costs and energy independence are to be meaningfully addressed, at least in the short term we must develop our energy technology, resources and reserves here at home.

Another competing opinion is to simply accept the high cost of energy and energy dependence as desirable, at least in the short term, even going so far as to prevent pump prices to go below, say, \$4 per gallon. The theory here is that by taking such dramatic action, individual and corporate behavior would eventually be adequately adjusted to make a real difference in the long term.

Embedded in all of these opinions and strategies is the climate change issue. This is unfortunate if meaningful progress on prices and independence is truly desired in the next few decades. We must remember that arguably the cleanest source of energy is being ignored – nuclear. We must expand nuclear energy production, particularly if more oil and gas exploration and production are delayed.

- *Common Assertion or Impression:* Oil companies are selfishly and irresponsibly choosing to not drill in the areas they are now leasing. Why do oil and gas companies want more access to areas to drill if they aren't using all of the 68 million acres they already have – isn't this obviously exploitation?

Competing Information: Anyone with only the most basic understanding of how oil and natural gas are produced knows that claims of “idle” leases is a diversionary feint. A company bids for and buys a lease because it believes there is a possibility that it may yield enough oil or natural gas to make the cost of the lease, and the costs of exploration and production, commercially viable. The U.S. government received \$3.7 billion from company bids in a single lease sale in March 2008. If these acres are not brought into production, they revert to the government with no refund of the payments made.

Until the actual exploration is complete, a company does not know whether the lease will be productive. If, through exploration, it finds there is no oil or natural gas underneath a lease – or that there is not enough to justify the tremendous investment required to bring it to the surface – the company cuts its losses by moving on to more promising leases. Yet it must continue to pay rent for the term of the lease – typically up to 10 years.

The volume of “idle acres” which have been presented include three types of areas: those under exploration to determine deposits, those with proven deposits and in process of setting up production, and areas determined to be unproductive.

These are classified as “idle” or “non-producing” during the time they are being explored, the time required to determine the size of the field, the time to obtain the government permits to commence producing, and the time for engineering and building the production facilities. Remember, all of these phases are technically “not producing oil”, and therefore “idle” – but all for appropriate reasons.

There are also many anecdotal examples of the frustration encountered when trying to bring an oil field on line e.g.: permission granted to explore but not to drill; permission granted to drill for oil but no permission to bring the unexpected natural gas deposits into production, etc.

The finger pointing in this regard is simply a false dodge.

- *Common Assertion or Impression:* We can’t drill our way out of the problem.

Competing Information: Some would say that really isn’t the point. They feel it is possible and important to “drill our way” back to \$3 per gallon, or some other chosen objective, and in so doing, also move in the direction of energy independence, at least in the short term. And they remind us of the added affect of using coal, coal gasification, shale oil production, and natural gas exploration. There is enough natural gas waiting to be tapped to heat all U.S. homes for 150 years. And, once again, how about the benefits of using nuclear energy?

- *Common Assertion or Impression:* The price of gasoline at the pump would be not be materially reduced by expanding our domestic oil and gas production. Any reduction will be tiny and won’t occur for years in the future.

Competing Information: Those arguing this also point fingers at the “greedy speculators” for driving up the price of oil. They can’t have it both ways. They can’t blame speculators for artificially driving up the price of petroleum and gasoline, while at the same time claim no real benefit from removing any reason for speculation due to uncertainty, while increasing the anticipated future volume of production. It is simply contradictory. Significant price reductions would occur if the U.S. took a measured but aggressive position to increase our domestic production of oil. It is a simple and well known fact that if speculation is truly impacting price, then a small increase in supply with the promise of more in the future, will have a material affect on the futures market. This is a simple and accepted concept and to argue any further is a waste of time.

More About the Oil Companies, Taxation and Legislation

- *Common Assertion or Impression:* Oil stocks are held by the very wealthy.

Competing Information: Less than 1% of Exxon Mobil, for example, is held by the “very wealthy”. And there are a few million additional shareholders of

various wealth levels who hold the stock directly. A vast majority of the remaining stock is held by pensions, 401k plans, etc. The majority of “beneficiaries” of oil profits are definitely, and provably, “the little guy”.

- *Common Assertion or Impression:* American consumers definitely hold the oil companies to blame for energy problems, particularly the price.

Competing Information: Recent polls indicate the number of Americans who blame the oil companies has recently dropped from 34% to 20%. And pollsters are told the impending legislation (e.g. Lieberman/Warner) is something the respondents don’t want to pay for. This proposal has been extensively reviewed by real experts, including many who are staunch but cautious global warming advocates and activists, as a massive subsidy-fest which will yield very few results at a great economic cost.

- *Common Assertion or Impression:* Windfall profits tax is an answer to our energy prices and independence because “they can afford it”.

Competing Information: Stock price is based on anticipated profits. If taxes are raised, profits are reduced, stock prices are reduced, and significant losers are pension plans, 401k plans, etc. Definitely “the little guys” are the biggest losers. If, on the other hand, the companies pass on the effect of the tax increases through higher prices, who loses? Again, it is easily demonstrated that most of our energy is paid for by “the little guy”. Those who would tax oil companies as a solution must first somehow create a “disconnect” between a company and its owners – the majority of whom are “little guys”!

The U.S. actually tried the windfall profits tax in the ‘80s. The Wall Street Journal reported in a 1990 analysis that, following the added taxes, oil production fell by 3% to 6%. Many small producers actually capped their wells.

And how about incentives? Will oil companies have an incentive to increase energy production if their profits are to be tainted as “excess”? There is something seriously wrong with the economic shallowness of politicians who believe that when oil companies prosper they should be punished. Remember, corporations are in business to create a return to their investors. If they are “punished”, repentance will not be the result. Rather, they will react by not making further energy investments. There will be fewer jobs than otherwise, and guess what – we will have even higher prices for oil.

- *Common Assertion or Impression:* Passing restrictive oil legislation, if nothing else is accomplished, will at least preserve off shore areas from drilling and environmental exploitation.

Competing Information: Cuba is planning to explore for oil in the Gulf of Mexico within 45 miles of the Florida coast. China, India, and Venezuela are planning to

join together to explore in the Gulf of Mexico. Brazil found two large oil fields in the Atlantic which is expected to make even that large country energy independent. We should remember that Canada allows drilling offshore in the Atlantic, Pacific, and even the Great Lakes. And Russia is preparing to explore the recent discoveries in the Arctic. Will these countries be better stewards than the U.S.? Someone will go after oil, wherever it is. The world will not follow our lead in restricting production. By our actions we have put ourselves at a great disadvantage – and to no net worldwide environmental gain.

- *Common Assertion or Impression:* OPEC is being unfair by restricting petroleum production and sales allocated to the U.S.

Competing Information: In response to this popular opinion, the U.S. House of Representatives actually passed a law by 324 to 82 which is considered to be, in its affect, a lawsuit against OPEC. It states: “It shall be illegal and a violation of this Act to limit the production or distribution of oil, natural gas, or any other petroleum product ... or to otherwise take any action in restraint of trade for oil, natural gas or any petroleum product when such action, combination, or collective action has a direct, substantial, and reasonably foreseeable affect on the market, supply, price or distribution of oil, natural gas or other petroleum product in the United States”. But isn’t that what our Congress has done relative to our domestic resources? Isn’t it the U.S. Congress which now “limits the production or distribution of oil” here in the U.S. by declaring that there’ll be no drilling in the Gulf or ANWR. Haven’t their actions also limited expanding our refining capacity? How arrogant and hypocritical!

- *Common Assertion or Impression:* While politicians have made some bad decisions, at least they have moved us closer to a comprehensive energy and environmental solution than we otherwise would have been.

Competing Information: The legislative actions of restriction and overreaction listed throughout this report have truly caused a huge step backward. The many restrictions, taken in combination with aggressively encouraging the very problematic ethanol as an alternative source, seem to be the behavior of a nation utterly NOT really serious about energy costs, independence and national security. We really aren’t even trying to do anything that will make a meaningful difference. We have been bombarded with many concerns which are virtually no longer valid – e.g. technology to be applied in ANWR and other drilling operations, nuclear applications, and implications for climate change (see my separate report on global warming).

How About the Nuclear Controversy?

- *Common Assertion or Impression:* Nuclear power production routinely exposes citizens to higher than normal levels of radiation

Competing Information: A stroll through Grand Central Station exposes a person to more radiation than a walk through a uranium mine or a nuclear power plant. A coal fired plant releases more radiation than a nuclear plant.

- *Common Assertion or Impression:* The limited level to which we have continued using nuclear energy has expanded the amount of radioactive material on the planet.

Competing Information: Half of the nuclear material in our country comes from dismantled Soviet bombs. We have not even begun to use the energy available from decommissioned U.S. nuclear warheads.

- *Common Assertion or Impression:* Waste from nuclear plants is significant.

Competing Information: The volume is far less than one would expect. For example, the amount of nuclear waste resulting from one individual's lifetime of high-powered energy use is about the size of a coke can. The coal equivalent for this individual would be waste totaling approximately 68 tons.

- *Common Assertion or Impression:* While relatively small, the amount of waste potential in the U.S. is significant and there is no real solution to this problem.

Competing Information: There is a viable solution right now in New Mexico. It is the WIPP (Waste Isolation Pilot Plant) in a deep salt formation in New Mexico. It has been operating since 1999. It now handles only military waste, but I understand there is no reason, except political, for it not to take all of our civilian spent fuel. Because nuclear waste has a relatively small volume, it has proven to be quite manageable, and developing other repositories is very doable.

- *Common Assertion or Impression:* There is very little we can do with nuclear waste other than find "a corner to put it in".

Competing Information: Recent technology advances have provided a commercially viable way to recycle nuclear waste for reuse in generating power. It is now not just a waste product and a burden. Rather, it is considered by some energy producers as a resource. Stay tuned for more on this development.

- *Common Assertion or Impression:* In spite of the lack of carbon emissions, it is overall a risky source of energy.

Competing Information: The safety issues have been dealt with effectively. The risks are relatively comparable or less than other types of energy generation. It is very clean and safe.

- *Common Assertion or Impression:* If we make a huge investment in nuclear energy, when other forms of energy come on line for electricity generation, specifically wind and solar, the nuclear capacity will no longer be needed.

Competing Information: The fact is that there is a concept which contradicts this thesis. It is the fact that any power grid has “baseload” requirements. This is the massive power which must constantly be available 24/7. I understand that this can come from only three sources: fossil fuel, hydro-electric dams, and nuclear. Hydro is maxed out. Fossil fuel is the source we are trying to limit for a number of reasons. That leaves only nuclear growth to handle much of the expected doubling of energy demand in the world by 2030.

Arctic National Wildlife Refuge (ANWR)

The ANWR story is interesting if for no other reason than it has received so much publicity, even though, while very significant, it may not result in the largest potential new source of oil reserves – even though many think it has that possibility.

- *Common Assertion or Impression:* A significant part of the refuge would be put at risk by exploration and drilling.

Competing Information: ANWR is approximately 19 million acres. This area is approximately 25% larger than West Virginia and is larger than 10 of our states. Of this, 17.5 million acres is permanently closed to exploration. Only the remaining 1.5 million acres, or 8 % of ANWR, will be considered for exploration – and much less than that will be affected by drilling and production – the footprint would not exceed a maximum of 2000 acres. That’s about the size of a large, but not huge, family farming operation, measuring **a little more than three square miles**. It is not well publicized that arctic exploration technology has dramatically reduced the “footprint” necessary for such a project.

- *Common Assertion or Impression:* The North Slope/Prudhoe Bay operation is already providing adequate amounts of production.

Competing Information: While it was a wonderful advantage several decades ago, since its peak in 1980, production has reduced by almost 67%. We need domestic replacements.

- *Common Assertion or Impression:* The impact on the price of oil from developing ANWR is too small to make a worthwhile difference.

Competing Information: It is reasonable to assume that just the psychological impact (disregarding the economic impact) will itself make a material impact on price, even long before any production is achieved. And in 10 to 15 years, we will really need the production because even miraculous progress on alternative

energy sources is not likely to have a significant affect in that time period. And, apart from reducing costs, we need to remember our concern about energy independence from a national security point of view. Even if prices remain relatively high, at least those dollars still remain in our economy.

- *Common Assertion or Impression:* Developing ANWR will have a significant impact on wildlife.

Competing Information: Previous oil and gas exploration in Alaska on the North Slope/Prudhoe Bay has successfully coexisted with wildlife. For example, after several decades the concern over the well-being of caribou has totally been put to rest – their population on the North Slope has quadrupled in total. And the herd which migrates through Prudhoe Bay itself has grown from 3,000 to 32,000 animals. There is also a healthy population of brown bear, fox and bird populations. The performance of these populations equals those in the protected surrounding areas which are not subject to the exploration and drilling. And, to reinforce the point, it is safe to describe the portion of ANWR which is set aside for drilling, as relatively devoid of major wildlife resources.

- *Common Assertion or Impression:* Alaskans have a mixed reaction to the possibility of drilling in ANWR.

Competing Information: State and federal legislators and governors have, for the last 25 years, unanimously supported it. The Inupiat Eskimos who live in and near ANWR support its development.

- *Common Assertion or Impression:* ANWR is too valuable a resource for tourists, visitors, naturalists, and adventurers, to risk it on such development. It is America's Serengeti.

Competing Information: Only a few hundred people visit the area each year, and the frequency of these visits is reducing. The largest category of visitors is hunters (215). ANWR is unbearably cold, dark, and inhospitable for much of the year. It is no overstatement to state that few seem to be interested in visiting it.

- *Common Assertion or Impression:* It is only a guess that significant reserves will be found in ANWR.

Competing Information: The geologic community's consensus is that ANWR has the highest potential of any North American onshore area ever explored, and the true potential anticipating developing technologies is "mind-boggling".

- *Common Assertion or Impression:* The area was set aside for preservation so we can't change our policy now.

Competing Information: The 1.5 million acres which may be considered for exploration was, by legislation, designated for oil and gas exploration. It is not part of the designated wilderness or refuge. And we need to remember that only 2000 acres (a little over three square miles) can ultimately be used. While this is not very large, we must expect that these acres will be spread over the 1.5 million acres in numerous drilling operations. And a network of roads will be built to facilitate production and distribution. Nevertheless, the footprint is very small.

But the fact remains that although set aside for exploration, the original legislation stipulated that Congress still must ultimately approve commencing exploration.

Alternative Energy Sources

- *Common Assertion or Impression:* Biofuels are an economical, clean and predictably successful solution for generating energy independence and cleaning our environment.

Competing Information: There are many sources of information that seem to indicate that using “food for fuel” is economically, environmentally, and morally a very flawed approach. The unintended consequences have been immense. Even at the current prices of crude oil, huge subsidies are required for ethanol to be competitive with gasoline. Therefore ethanol is still much more costly than gasoline. As of this date, it takes approximately 29% more fossil fuel energy to produce corn ethanol than the energy which ethanol will provide.

It is argued that ethanol increases two of the most dangerous air pollutants – “volatile organic compounds” and “nitrogen oxides” (NOx). It is argued by some that nitrous oxide emissions from corn production cause up to 50% more warming than the substitution of ethanol for gasoline avoids. Some estimates are that NOx is estimated to have 296 times the “global warming” potential as CO2.

And food prices are soaring. Many argue that if we must have biofuels, quit favoring corn ethanol subsidies and look to sugar ethanol. It is argued that this switch would provide eight times the energy of fossil fuel required to make it, and it’s use emits less pollutants than corn ethanol. And while sugar is a food, it is not the staple that corn is and any affect on food costs would be much less severe.

- *Common Assertion or Impression:* Solar and wind energy solutions have not been as aggressively pursued because, technologically and economically, they may not ever be able to make a meaningful contribution to the solution.

Competing Information: The lack of congressional support may be due to a lack of lobbying effort on the behalf of non-agricultural interests. These technologies can be helpful. For example, in the southwest U.S. where there is a lot of sunshine we could follow the lead of other countries and use solar energy for

applications such as heating water. And wind power has been used for decades and is now making more and more of a contribution.

Nevertheless, while making an important contribution, alternative energy sources are not likely to be the bulk of a comprehensive solution. For example, even if the problems of corn ethanol didn't exist (which they do), and if we turned America's farmland into corn ethanol and solar farms, some experts say we couldn't come close to the moderate environmentalists' CO2 goals – even by 2050. Considering just the impact of wind power, a report from the Department of Energy in May 2008 states that the U.S. could build enough wind farms to provide 20 percent of the nation's electricity, but it wouldn't happen until 2030.

Many critics feel politicians have been almost cruel in their ambitious promises of creating energy independence through alternative methods and new technologies – at least any time soon. We may someday rely significantly on wind and solar power, for example. But the simplicity, feel good fantasies, and exaggeration of some proposals discredit the arguments. They simply can't be delivered as promised. And their proponents don't mention that even when delivered, nuclear energy will have to be a large part of any comprehensive “clean” solution.

Even if we proceed aggressively on all fronts including alternative sources, fossil fuels, nuclear, and conservation through new technologies, we are decades away from any significant long term price abatement and energy independence. We have to remember that right now we are up to approximately two-thirds dependent on foreign oil. We are already almost 40 years past our peak level of domestic oil production. We must be practical and realistic in our approach going forward.

- *Common Assertion or Impression:* Strong proponents of eliminating use of fossil fuels in favor of alternative energy sources generally are unable to accept any future fossil fuel exploration or nuclear energy expansion.

Competing Information: Some of the most reasonable approaches by environmentally sensitive experts recognize that, while they consider it to be unfortunate, this is not an easy process and will involve a long transition. These experts usually predict that a successful transition away from polluting energy sources will take 30 to 40 years. Some predict more, some less. But the most credible predict at least two decades. And this long period would still require an assumption of a very early transition of auto and truck fleets to hybrid and fully electric vehicles. These very thoughtful approaches always include nuclear energy as a major ingredient of the solution – even with very aggressive assumptions for the success of alternative sources of energy. They recognize how long it will take to bring on line the interim requirements for fossil fuel reserves, and the time required to build the nuclear energy capacity which will be required 20 to 40 years into the future.

My Opinion

The U.S. doesn't have an energy crisis as much as we have a regulatory crisis!

All too often, our energy debate revolves around the notion that support for increased domestic oil and natural gas production implies opposing renewable energy, conservation, and sound environmental policy. Why?! These shouldn't be competing priorities – rather they are easily complementary ones. I believe the ultimate success in this effort must consider several measurements which are interrelated. Reasonably priced, efficient, and clean energy is possible while we pursue these recommended policies. We have had a 30 year policy of locking up America's resources. We have the largest supply of coal in the world – 27% of the world's reserves. Our shale oil reserves in the Rocky Mountains are three times the size of Saudi Arabia and they are currently off limits. And don't forget about the shale oil potential in the Bakken formation. We are reliant on foreign dictators for high priced oil which is a threat both to our economy and to our national security.

We must aggressively seek to be energy independent as a country – this having implications for our economic security objectives in addition to the economic issues. Our military is, and will continue to be, a huge consumer of petroleum products. An interruption, e.g. terrorist related, of the flow of petroleum from the Persian Gulf would be ruinous on all fronts. Very little emphasis about this seems to come from our politicians and presidential candidates. They must come to recognize the need to remove this very important security concern. While they seem to give lip service to energy independence, at the same time they support policies, especially restricting domestic drilling, that guarantee even more importation of foreign oil under any realistic scenario.

The cost of energy would be reduced by having a stronger U.S. dollar and monetary policies should reflect how important this is. Furthermore, approximately \$700 billion is spent outside the U.S. for oil. If we were to keep these dollars at home through more domestic production, we would most certainly: virtually solve our balance of payments problem; create more domestic tax revenue from resulting local profits; improve our security through energy independence; and significantly strengthen our U.S. dollar.

Nuclear energy development is an imperative. Expanding our refining capacity is essential. We must drill in ANWR, the Gulf, and off our Atlantic and Pacific coasts. We must wisely exploit our oil shale resources and our extensive natural gas resources. While using coal in the short term, we should consider developing coal gasification capacity. We now have the technology available to make significant use of flexible fuel vehicles (FFVs) – we should do so.

And we should continue to pursue alternative energy sources. If ultimately proven worthy, they will find a place in our energy formula. This includes smart and clean biofuel development, solar technology development, widespread use of wind power, and several others. However, these alternatives are not enough of the solution to enable us to ignore fossil fuels in the near term, and nuclear power in the near and long term.

Seeking these goals and implementing these solutions do not preclude giving consideration to legitimate environmental concerns – but we must discard foolish reactions and policies. Congress has blocked essential elements of the solution, including accessing our natural resources and nuclear energy. The only way to realistically achieve our objectives of reasonably priced energy, with a minimum of pollution, is to follow this path and make it a transition of 20 to 40 years. All of these elements must be tied together with a national energy plan for energy independence. We simply do not currently have one. A successful transition will most certainly require advancing on all fronts. I am confident we will eventually come around to the patient, comprehensive approach, so why not do everything necessary to make sure we start right now. Market pressures will, if we let them, also contribute to an overall solution – much more than the deceit and “demagoguery” we are used to hearing and which only delay the inevitable.

I sincerely believe that if we do these things we will leave a better country and planet to our children, grandchildren and beyond!

Sources of Information

The following is not intended to be a complete detailed bibliography or list of notes and references which would be adequate for publication or other wide use of this report. I have given specific attribution to very few quotes and statistics. Therefore, this report, as with most of my other reports, is in a state of “technical plagiarism”. This report is not intended for publication. These lists are merely intended to relay the nature, extent, and sincerity of my effort to become personally more knowledgeable. In the case of the “books” listed below, you will note that sometimes I have relied solely on “excerpts, summaries, commentary, and reviews”, as I clearly indicate. This is done for purely “economic” reasons i.e. I don’t want to buy the book because my library of resource material is too large already. At a minimum, I hope this list lends a level of credibility to the information provided. The items below are listed in no particular order.

Books

Beyond Fossil Fools: The Road to Energy Independence by 2040 by Joe Shuster – excerpts, summaries, commentary, and reviews

Power to Save the World – The Truth About Nuclear Energy by Gwyneth Cravens – excerpts, summaries, commentary, and reviews

Cool It by Bjorn Lomborg

Scared to Death: From BSE to Global Warming – How Scares are Costing Us the Earth by Christopher Booker and Richard North – excerpts, summaries, commentary, and reviews

Myths, Lies, and Downright Stupidity by John Stossel

Writers, Columnists, Commentators, Educators, Scientists, Reporters, Editorial Sources, and Current or Former Government Officials – Whose Material Was Reviewed (often multiple items for each, most relatively brief - some are experts and others obviously are not. I have not used information from all of these, and have tried not to use any facts or statistics unless the reliability of the source is apparent and at least credible)

Graham Stewart	Richard D. North	Thomas L. Friedman
Thomas Sowell	Walter Williams	Mark Steyn
John Stossel	Jonah Goldberg	Jack Kelly
Cal Thomas	Bob Tyrrell	Charles Krauthammer
Fred Barnes	Frank J. Gaffney, Jr.	Irwin M. Stelzer
David Phelps	Congressman Steve King	John Wilen
Senator James Inhofe	Ben Lieberman	H. Josef Hebert
Glenn Beck	Paul Greenberg	Mona Charen
Newt Gingrich	Neal St. Anthony	Barbara Surk
Treas Sec Henry Paulson	Kathryn Lopez	Bjorn Lomborg
Steve Chapman	H. Sterling Burnett	George Will
Anthony Effinger	Clifford D. May	Bud McFarlane
Debra J. Saunders	Joseph Coleman	Samuel Bodman
Jeff Jacoby	Joseph Hebert	Congressman John Peterson
Victor David Hanson	Tom Doggett	Paul Krugman
Sheryl Gay Stolberg	Pat Doyle	Linda Chavez
Tom Raum	Red Cavaney	Tom Teepen
Ed Koch	Edward Lotterman	Dan Browning
Robb Mackie	Carl Hulse	Steven Lee Myers
David Lightman	Dick Morris	Eileen McGann
Rich Lowry	Congressman Chris Cannon	David Espo

Papers, Pamphlets, and Studies (generally reviewed summaries, or excerpts)

U.S. Senate Committee on Environment and Public Works – Reports on Web Site

Gallop Poll Reports - excerpts

Exxon Mobile Corporation – financial statements, 2004 through 2007

Tax Foundation Statistics

Websites and Online Newsletters or Publications - most monitored regularly / some specific to this project only

The Spectator	Politico	anwr.org
The Weekly Standard	nhbroadcaster.com	Jewish World Review
The Heritage Foundation	ICECAP	Associated Press
Stuart Hampton	Energy and Capital	Bloomberg News
National Resources Defense Council (NRDC)	National Center for Policy Analysis (NCPA)	The Wall Street Journal
New York Times	The Economist	