

ENERGY – SOURCES, COSTS AND CONTROVERSIES

– POINT/COUNTERPOINT **PART II** – AND MY OPINION

Stephen L. Bakke, July 2008 and April 2011

As with the prior report, here I first present an argument most often presented by liberals and progressives. This is followed by an argument using competing information.

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.

- **Point:** A significant part of the refuge would be put at risk by exploration and drilling.

Counterpoint: 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.

- **Point:** The North Slope/Prudhoe Bay operation is already providing adequate amounts of production.

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

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

Counterpoint: 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.

- **Point:** Developing ANWR will have a significant impact on wildlife.

Counterpoint: 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.

- **Point:** Alaskans have a mixed reaction to the possibility of drilling in ANWR.

Counterpoint: 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.

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

Counterpoint: 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.

- **Point:** It is only a guess that significant reserves will be found in ANWR.

Counterpoint: 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".

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

Counterpoint: 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

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

Counterpoint: 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” (NO_x). 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 NO_x 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.

- **Point:** 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.

Counterpoint: 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.

- **Point:** 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.

Counterpoint: 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!

Stay tuned for new, different, and updated reports on energy sources, supply, and independence.