"History is a race between education and catastrophe."

-H.G. Wells.

# COMMON SENSE AND FOSSIL FUEL MANAGEMENT

***(Denial is not a River in Iraq)***

*By Dan Armstrong*

Three critical and interdependent issues are likely to define the first quarter of this century. Depletion of petroleum reserves, climate change, and the rise of the radical Islamic terrorist movement pose serious and long range concerns for the global community. Though the lords of the business roundtable might call it naive, a steady diminishing of the use of fossil fuels would go a long way to alleviating all three of these concerns. Mindful conservation of petroleum reserves would extend the lifetime of one of our most useful natural resources, relieve our atmosphere of increasingly hazardous chemistry imbalances caused by carbon emissions, and ease the explosive politics of the Middle East. Instead we seem bent on burning fossil fuels as though there is no tomorrow, effectively throwing gasoline on the raging fire of terrorism and accelerating the unknowns of global warming.

Stewardship of the biosphere need not be such a difficult proposition. With our planet's wide diversity of natural resources, life forms, and climatic conditions, maintaining a veritable paradise on earth is entirely within the reach of human enterprise and imagination. There are efficient and practical ways of managing natural resources while also keeping the water and air clean. And yet our profligate use of fossil fuels belies all pretenses of forethought or reason.

Imagine that planet earth is a huge round four trillion-barrel oil tanker sailing through space encased in a bubble of recycled air. Humans have spent ten thousand years building a vast and elaborate civilization on the deck of this spherical organic spacecraft. In a one hundred year-

flurry, however, we have consumed approximately half the contents of our tanker. In the process, we have dumped some 200 billion tons of carbon waste products into our ventilation system and caused a vicious worldwide cultural rift. Only one thing prevents us from gaining control of our self-destructive petroleum habit: Lemming-like denial.

**PEAK OIL:** In 1949, a geologist by the name of Marion King Hubbert reached a very disturbing but stunningly obvious conclusion about world reserves of fossil fuels. At some point, they would be used up. In that petroleum, coal, and natural gas are natural resources of finite quantity, this is not a particularly penetrating observation, except for the time frame he projected.

The term *Peak Oil*, which has recently begun to appear in the mainstream lexicon, comes out of Hubbert's work. It is defined as the point where oil production from any field or collection of fields reaches its maximum. It is generally equivalent to the half way point for recoverable petroleum from any given supply. Applied to the earth's entire petroleum reserve, it is that point when our four trillion barrel tanker is drained to two trillion. A time which by all estimates draws dangerously near.

In the 1950s, Hubbert projected that world oil production would peak sometime between 1990 and 2000. In the years since, however, advances in knowledge and computer modeling have allowed today's geologists to refine Hubbert's projection. Improved techniques for estimating future discoveries of petroleum reserves, increasingly efficient recovery technology, progress in the substitution of coal for oil, and new hopes to refine oil sands have pushed Hubbert's date back about twenty years. Let's call it the tail end of the baby boomer generation. Yet despite the growing acceptance of this inevitability and in the face of depletion, petroleum use continues to grow at a rate of two percent a year.

Presently the world consumes upward to 80 million barrels of petroleum daily—some 20 million in the United States alone. As China's middle class grows and more Chinese buy and drive cars, this figure is projected to climb as high as 120 million barrels by 2030. At today's rate of using 30 billion barrels annually, our remaining two trillion or so will last 50 years. Hmmm, we might hope the people of Asia can remain happy with their bicycles.

What's wrong here? Why all the hurry to consume such an important and finite resource? If it's not denial of the facts, it's untempered greed.

*Petroleum is the economy*. The faster it flows the more money is made. It's as simple as that.

Since the Second World War to the present, steady and predictable petroleum production has been the backbone of world industry. Automobiles, electric power plants, plastics, fertilizers, explosives, everything from energy production to synthetic materials to agriculture to transportation to war depends on fossil fuels—primarily crude oil. More than half of everything we consume is either grown with, made of, delivered by, or packaged in petroleum products. Our way of life is completely dependent on the price of oil. The cheaper the better.

*World economic growth relies on increased oil production.* We have seen this clearly in the last year. A doubling of the price of crude caused by production stresses in Nigeria, Russia, and Iraq resulted in a stagnation on Wall Street. The Dow Jones average literally rises and falls in reverse proportion to the price of oil. In a speech to the National Italian American Foundation in October of 2004, then Federal Reserve Chairman and economic guru Alan Greenspan confidently described the present oil price jitters as merely situational and transitory. The topic of peak oil, however, was never mentioned. In the not so distance future, Mr. Greenspan is unlikely to be so sanguine.

Thus the obvious question arises: If our economy depends so heavily on petroleum, how will we prepare for the end of the Age of Oil? Generally, the party line is leave it to the free market. As supplies diminish, prices will rise. Simple economic dynamics will eventuate conservation and money will flow to alternative energy research. Solar, wind, and hydrogen technologies will be advanced and improved. Alternative sources will gradually replace fossil fuels. Money and necessity will mother invention. That is the genius of capitalism.

Some argue, however, that as oil prices rise, refiners will be able to pass larger and larger portions of their costs on to customers. This is something we have seen over the short term. This year's record crude prices came with record oil industry profits. Rather than tending to conservation, the market may actually hurry to an end. Like water in the desert, oil will become more valuable than money. There will be a run on the petroleum market not a gradual weaning. We will see a rapid depletion of reserves, hoarding, and precipitous economic decline. Alternatives will arise out of the ashes, not smooth transition. Conservation now, while we have some time, might well come with an economic roll back as we press the alternatives to carry the

load, but a slowdown would be better than an economic collapse. Little pains now in exchange for big problems later. What's that time worn adage? A stitch in time saves nine.

But let's not be mother hens. Perhaps, the free market can be trusted to make wise decisions, and the give and take of capitalism will enable a smooth transition from petroleum to some better alternative or alternatives. This scenario is well argued. Yet the other half of the fossil fuel equation still screams for conservation and restraint. What of those 200 billion tons of carbon exhaust that have already altered the thermodynamics of our atmosphere? Do we throw caution to the wind and another couple hundred billion tons of carbon waste into the air? The evolution of increasingly benevolent euphemisms for global warming from climate change to climate science, suggest only more denial. A brief review of the political history is apt.

**GLOBAL WARMING:** In 1992 President George Bush Sr. signed the United Nations Framework Convention on Climate Change. This treaty requires technical reports from signatory nations every four years. The first two U.S. reports came from the Clinton Administration. In the aftermath of that administration's second report in 1997, which specifically linked global warming to the use of fossil fuels, President Clinton described climate change as "one of the most significant challenges of the 21st century." "Make no mistake," he said in a speech to the National Geographic Society in October of 1997, "the problem is real. And if we do not change our course now, the consequences, sooner or later, will be destructive for America and the world."

In spite of this ominous pronouncement and the pro-environment lobbying of Vice President Gore, the United States did not sign the Kyoto Protocol of 1997—primarily because the only real way to cut in carbon emissions is to cut the use of fossil fuels, which would also tend to slow the economy, the most despicable of all possible policy outcomes through which no U.S. president or political party can long survive.

In May of 2002, President George W. Bush's Environmental Protection Agency's presented its first Climate Action report to the United Nations. It reiterated Mr. Clinton's concerns and re-verified the link between fossil fuels and global warming. Plain and simple, the report tells us that climate change has already begun. Even should we stop burning fossil fuels today—though the report anticipates a 43 percent increase in U.S. carbon emissions between 2000 and 2020, because of the "long lifetimes of greenhouse gases already in the atmosphere, the

momentum of the climate system is projected to cause the climate to change for more than a century." In that period, temperatures "in the contiguous United States would rise 5 to 9 degrees Fahrenheit." "The central tier of states would experience climate conditions roughly equivalent to those now experienced in the southern tier, and the northern tier would experience conditions much like the central tier." Soil moisture content across the grain belt would decrease by a third or more. Critical snow pack in western mountain regions would diminish, impacting reservoirs, flood protection, power production, and the sustainability of many mountain habitats. Some Alpine meadows in the Rocky Mountains would dry up and disappear completely. The sugar maple would migrate north out of the U.S., and changes in large-scale forest processes, "such as fire, insects, droughts, and disease, could put forest productivity in jeopardy." With these kinds of extrapolations, hurrying to put more carbon into the atmosphere seems fool hearty indeed.

But as soon as this report appeared on the EPA website, conservatives around the United States spoke out against it, voicing concern that the new administration had given in to the European viewpoint. President Bush, who had assembled what is arguably the most pro-oil cabinet in history and had disdainfully called the Clinton Climate Action Report "junk science," immediately distanced himself from his own environmental agency's statement, saying first that he'd read the report, then that he hadn't, finally confirming that under no circumstances did this report suggest that the Unites States would sign the Kyoto Protocol. The President's reaction led directly to EPA Director Christie Whitman's resignation, followed by a prompt editing of the document on the EPA website.

A little over a year later, the EPA, under the directorship of Gale Norton, issued the first State of the U.S. Environment report in six years to contain no section on global warming. In a manner of speaking, the fix was in. Global warming had been reduced to a supposition.

The Bush Administration most recent climate assessment, published in July 2004 in a pamphlet entitled "Our Changing Planet," pushes this denial to new levels. The pamphlet defines the goals of the newly formed United States Climate Change Science Program. With great pomp and ceremony, the CCSP calls for ten years to study and verify the science of global warming. The study's stated purpose is to "reduce uncertainty in projections of how the Earth's climate and related systems may change in the future." The phrases *reduce uncertainty* and *may change* are both curious and revealing. Why all the hemming and hawing? After over forty years of study, instead of addressing the problem directly and with courage by cutting emissions, we will

spend an additional ten years debating what is already known. Or perhaps, in the double-speak of denial, clarifying the uncertainties of climate science. In that ten years, we will add 70 billion tons of carbon exhaust to a climate system that already has a lead time of 100 years. We may as well initiate a space program to colonize Venus. This kind of obvious political foot-dragging would be laughable if the situation were not so grave.

For anyone who has the slightest doubt about the reality of climate change, visit go north. While the continental United States has experienced a temperature increase of one degree Celsius since 1900, Alaska and the Arctic regions have experienced an increase of 5 to 7 degrees Celsius. In the last thirty years, the ice mass of the Arctic north has been reduced by an area equal in size to states of Texas and Arizona. Estimates suggest there may be no summer ice pack at all in the Arctic by 2090. If that does not provoke enough sense of urgency, in that the ice caps are the earth's single most important cooling apparatus, visit Alaska's Kenai Peninsula where an extensive spruce forest has all but disappeared due to a climate related insect invasion.

No need for alarm though.

In the days immediately following President Bush's reelection this November, the President reaffirmed his commitment to denial, announcing that he will not push to cut carbon emissions if it results in the loss of a single job in the United States. In short, we won't give a single stitch to save nine. But no single political party is to blame for this kind of hubris. The connection between jobs, the economy, and the burning of fossil fuel has been a continuing bipartisan evasion of "*the most significant challenge of the 21$^{st}$ century*." George Bush just happens to be more brazen than most. Instead of simply cutting fossil fuel usage, he plans to auction off emission quotas in the open market. One must wonder, however, if the market can accurately anticipate cost analysis for negative effects that come with lag times in the tens of years? Is there any chance the profits off fossil fuels will always stay ahead of the political costs of their pollutants? They have so far. Reasoned conservation is a stronger solution than free market posturing—and a foreign policy centered on appeasing oil rich nations in the Middle East.

**THE MIDDLE EAST:** If conservation of petroleum for the sake of extending global resources beyond the twenty-first century isn't a good enough reason, if restraint in the burning of fossil fuels to minimize carbon pollution in the face of extenuating climate changes isn't a good

enough reason, perhaps the added bonus of cutting our dependency on Middle East oil can tip the balance of common sense?

Our oil habit is the primary cultural scourge upon the Middle East. The unholy relationship between Saudi Arabia and the western oil industry provided the initial financial means and central political impetus behind the rise of Osama Bin Laden and his followers. Though certainly the American-Israeli alliance is a large part of the Jihad's grievance, removal of the American military presence from the Arabian Peninsula was enunciated as one of Al Qaeda's primary post 9/11 demands. Were we to find a way to substitute for petroleum in our economy, we could leave the people of the Middle East to evolve politically at their own rate, rather than accelerate them into the twenty-first century with our greed for oil profits.

Regardless of how you read the numbers, five years, ten years, twenty years, fifty years, the end game for petroleum is at hand. For any country interested in moving large quantities of armored equipment or battalions of soldiers, control of oil will only increase in importance on the backside of the depletion curve. It will become the motive behind every nation's diplomatic strategy. It already provides significant incentive to US military planning. Though it has been denied a thousand times, oil was the motive for our invasion of Iraq. And if by some implausible chance it wasn't, it should have been. As we watch the price of a barrel of petroleum jump in fits and starts to record highs, what better reason could we have for invading a nation that was so corrupt it was more danger to itself than any other country or political ideal. A country that holds a sizeable portion of the all known oil reserves was being managed by a murderous, warlord want-to-be. In some regards, Saddam Hussein was begging for it. Regime change was nothing less than a smart business move.

Oil is our economy, our national security, and the foundation of the job market. With this admitted, was it really such a horrible thing to implement a foreign policy aimed to maximize our control of the most important non-renewal resource on the planet? If everything that occurs in the global market is bracketed by the OPEC spigot, would it not be significant if not imperative to puppet one of the oil cartel's most well endowed?

It depends on your thirst for bloodshed. In an age of increasing Islamic radicalism it is manifest absurdity. We might as well hand out cases of RPG's to an angry Muslim mob at the Super Bowl. World terrorism is as intimately connected to petroleum as carbon waste and

climate change are to the burning of fossil fuels. Every time you fill up your gas tank, imagine that you are dribbling nickels and dimes into funding another 9/11.

**COMMON SENSE:** Management of fossil fuels is the defining issue of our times. Taken as one, concerns for petroleum depletion, global warming, and the rise of terrorism pin point the most urgent technical question confronting us today, finding cheap and clean sources of energy. While the search for alternative energy sources has been going on for well over a quarter of a century, because oil remains far and away the cheapest answer—in some perverse way—to our energy needs, the market forces of capitalism have not focused research monies into different energy arenas and only modest inroads have been made in the science of alternative energy. Patience for breakthroughs in hydrogen technology or solar electric conversion is all well and good, but in the meantime we continue to use up our stores of fossil fuels with a haste that is utter madness. Conservation is a better way to go. Not just for the sake of responsible usage, but for the health of the biosphere and respect for the Islamic peoples. Admittedly, this is no easy task. Slowing petroleum use does change the dynamics of the world economy in a big way. Nowhere with more impact than in the United States. And, unfortunately, the reward is not an obvious or immediate one. It addresses the abstraction of a future one generation off. Not even calling it our children's future seems incentive enough to inspire increasing fuel efficiency in the gas guzzling beasts that rule our highways and smog our reason.

In the end, no single event defines the haste and waste more clearly than the war currently raging in Iraq. If the press of petroleum economy were not so all encompassing, we would not be there. Saddam would have had even less influence in the world than the little he had. Some three thousand soldiers would still be alive. Tens of thousands of innocent Iraqi citizens would still be alive. Many bombed cities in Iraq would not be rubble. Tens of thousands young Islamic men would not be considering giving their life to Jihad. And some $500 billion and counting would not have been spent on helter-skelter destruction. *Had we the foresight*, we could even have targeted half that sum for alternative energy research. By now, perhaps, a viable petroleum substitute would be at hand. Instead, like a drug addict, we have made one bad choice after another to extent our habit a few more years. Common sense says it's not worth it. Not even close.

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