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No Technofixes for Peak Oil

Written by Alice Friedemann

When you read articles that promise renewable energy, go to the library and pore over old *Popular Science* and *Scientific American* magazines. You'll see a lot of Gee-Whiz contraptions that never materialized... The only information you can trust on matters of science and engineering are peer-reviewed articles in respected journals. And even then you have to be a bit skeptical. For example, the Farrell Science paper on ethanol had to resort to the results of three non-peer-reviewed USDA sponsored papers to come up with a very tiny favorable positive net energy result for ethanol (half of the papers cited).

Here are some books/links to read to understand the technical challenges of various proposed energy solutions: Howard Hayden. 2005. *The Solar Fraud: Why Solar Energy Won't Run the World* ... Martin Hoffert, et al *Advanced Technology Paths to Global Climate Stability: Energy for a Greenhouse Planet* - 1 Nov 2002 - *Science* ... Joseph J. Romm. 2004. *Hype About Hydrogen: Fact and Fiction in the Race to Save the Climate* ... U.Bossel & B.Eliasson. *Energy and the Hydrogen Economy* www.methanol.org ... Alice Friedemann. *The Hydrogen Economy: Energy and Economic Black Hole* energybulletin.net ... D. Pimentel, T. Patzek. *Ethanol Production Using Corn, Switchgrass, and Wood; Biodiesel Production Using Soybean and Sunflower*. 2005. *Natural Resources Research* Vol. 14, No. 1

It's an ecological crash because so many threads of depletion and pollution are coming together at the same time, just as Meadows' *Limits to Growth* projected... Cheap and plentiful energy is hiding the fact that we're already in an ecological crisis. Energy is holding many existing environmental disasters at bay. Here are just a few:

- 1) Invasive species in the United States cause major environmental damage with losses of about \$137 Billion per year. But with energy intensive machinery and chemicals we are able to control the damage to a much larger extent than we could otherwise (i.e. getting invasive water weeds out of irrigation canals, etc).
- 2) Depletion of fisheries worldwide from over-fishing, nitrogen-runoff dead zones, and mercury poisoning (which will only increase as we turn to coal). We still have enough energy now to send ships to the most remote corners of the planet to harvest the remaining fish and to grow fish on fish farms, but as energy declines, so too will seafood (as well as from all the other contingencies, such as refrigeration).
- 3) Now people don't need to burn wood to cook with and heat their homes, but as energy declines, the decimation of forests will accelerate.
- 4) Aging infrastructure will no longer be able to be repaired. We already have terrible grades in infrastructure while there's cheap energy. The American Society of Civil Engineers gave the following grades to our infrastructure in 2005.

Grade: - Infrastructure Components – C+... Solid Waste – C... Bridges –D+... Aviation Transit – D... Dams Energy Hazardous Waste Roads Schools – D... Drinking Water Wastewater Navigable Waterways – D-... As bridges and roads fail, as water begins to carry disease, etc., the ability to deliver clean food and water will decline. Ninety percent of our life-spans (from an average of 40 years a century ago to 80 years now) are due to clean food, water, use of natural gas and oil instead of coal and wood -- only 10% from pharmaceuticals and medical technology.

- 5) Ground water Depletion, which half of Americans rely on, to below what can be manually pumped.
- 6) Depletion of the Ogallala aquifer, where a over a quarter of our grains, hogs, and cattle grow. This will lead to another dustbowl and turn the land into a desert across over 175,000 square miles of land in the ten high plains states. Already millions of acres have been abandoned because the energy costs to pump water up are too high.
- 7) Crop production reduced by:
 - a) Lack of fertilizer and pesticides on land that's been ruined by them.

Gustavus Adolphus College in St. Peter, Minn., just hosted its 43rd Nobel Conference. The theme this year was "Heating up the energy debate." Here are some highlights... The conference lectures began with Dr. Steven Chu, director of the Lawrence Berkeley Lab and 1997 Nobel Prize winner. Chu said climate changes are occurring much faster than predicted just a few years ago. Forty percent of British Columbia's pine forests are already dead and most of the rest will be gone by 2013 due to warming that allows predatory beetles to survive winters in the pine forests... Tibetan glacial ice provides summer runoff that supplies water to one-third of the population of the world. Tibetan glaciers are rapidly melting and dependent streams will seasonally run dry as the glaciers disappear.

Chu said free markets alone fail if there is a "common problem" such as air pollution, water pollution, or global warming.

He gave this example of the power of a free market system to improve products, given the proper incentives: In 1975, refrigerators selling for about the same price had an energy efficiency range of 4-1. Since they sold for about the same price it was obvious that efficiency was not an expensive attribute. Energy efficiency standards and ratings were established and by 2004 refrigerators had increased in size by 25 percent while the cost dropped by 50 percent and the energy use dropped by 80 percent... Chu said biofuels will be an important but inadequate replacement for CO2-emitting fossil fuels. We also need great improvements in energy conservation, efficiency and clean energy supplies such as solar and wind energy.

Ken Deffeyes, geologist and a professor of geosciences, emeritus at Princeton University, discussed the rapid depletion of crude oil. The global discovery of conventional crude oil peaked in 1964 and production peaked in 2005, according to Deffeyes. The upward trend in oil prices we are now experiencing is a natural outcome of growing global demand and depleting reserves.

Competition to secure access to the remaining reserves on is underway between large consuming nations such as Russia, India, the U.S., Canada, Japan and the European Union... The rapid loss of Arctic ice has led nations to lay claims to possible energy reserves under the thinning polar ice cap. Deffeyes said more than 100 deep-sea holes have been drilled elsewhere and no oil has been found. A set of special conditions are all required to produce oil and natural gas reserves and most of the planet never had all of them. There may be no significant reserves beneath the Arctic ocean

Deffeyes noted that the time remaining for serious action on energy is relatively short, perhaps five years. The path we have been on will likely lead to war and famine, but, we still have choices in that regard.

Lynd is a biology professor at Dartmouth College. He said "plant biomass is the only foreseeable sustainable source of organic fuels, chemicals and materials." Crude oil and natural gas were formed from deposits of algae in ancient shallow sea beds 90 to 150 million years ago. Those fuels have been referred to as "ancient sunlight." Lynd's biofuels are powered by "current budget sunlight."...While he estimated that a biomass fuel processing plant would service an area with a radius of about 50 miles and may produce up to 50 million gallons of fuel per year, his opinion is that biomass fuels will not solve our sustainability problems.

The audience was urged to contact their elected officials and relate their concerns and willingness to pay higher energy costs for climate change mitigation and fuel conservation. Failing to act decisively now will become far more costly in the years ahead.

Norm Erickson of Rochester is a retired IBM technical educator who has spent years studying the world's fuel supplies

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<http://edition.cnn.com/2007/BUSINESS/10/24/oil.decline/index.html>

Report: 'World at peak oil output'

LONDON, England (CNN) -- The world has reached the point of maximum oil output and production levels will halve by 2030 -- a situation that will eventually lead to war and disaster, a report claims.

The Sovereignty Showdown in Iraq

The oil game in Iraq may be almost up. On September 29th, like a landlord serving notice, the government of Iraq **announced** that the next annual renewal of the United Nations Security Council mandate for a multinational force in Iraq - the only legal basis for a continuation of the American occupation - will be the last. That was, it seems, the first shoe to fall. The second may be an announcement terminating the little-noticed, but crucial companion Security Council mandate governing the disposition of Iraq's oil revenues.

By December 31, 2008, according to Foreign Minister Hoshyar Zebari, the government of Iraq intends to have replaced the existing mandate for a multinational security force with a conventional bilateral security agreement with the United States, an agreement of the sort that Washington has with Kuwait, Saudi Arabia, and several other countries in the Middle East. The Security Council has always paired the annual renewal of its mandate for the multinational force with the renewal of a second mandate for the management of Iraqi oil revenues. This happens through the "Development Fund for Iraq," a kind of escrow account set up by the occupying powers after the overthrow of the Saddam Hussein regime and recognized in 2003 by U.N. Security Council Resolution 1483. The oil game will be up if and when Iraq announces that this mandate, too, will be terminated at a date certain in favor of resource-development agreements that - like the envisioned security agreement - match those of other states in the region.

The game will be up because, as Antonia Juhasz **pointed out** last March in a *New York Times* op-ed, "Whose Oil Is It, Anyway?"

"Iraq's neighbors Iran, Kuwait and Saudi Arabia. Have outlawed foreign control over oil development. They all hire international oil companies as contractors to provide specific services as needed, for a limited duration, and without giving the foreign company any direct interest in the oil produced."

By contrast, the oil legislation **now pending** in the Iraqi parliament awards foreign oil companies coveted, long-term, 20-35 year contracts of just the sort that neighboring oil-producers have rejected for decades. It also places the Iraqi oil industry under the control of an appointed body that would include representatives of international oil companies as full voting members.

The news that the duly elected government of Iraq is exercising its limited sovereignty to set a date for termination of the American occupation radically undercuts all discussion in Congress or by American presidential candidates of how soon the U.S. occupation of Iraq may "safely" end. Yet if, by the same route, Iraq were to resume full and independent control over the world's third-largest proven oil reserves - 200 to 300 million barrels of light crude worth as much as **\$30 trillion** at today's prices - a politically incorrect question might break rudely out of the Internet universe and into the mainstream media world, into, that is, the open: Has the Iraq war been an oil war from the outset?

Former Federal Reserve Chairman Alan Greenspan evidently **thought so** or so he indicated in a single sentence in his recent memoir: "I am saddened that it is politically inconvenient to acknowledge what everyone knows: the Iraq war is largely about oil." When asked, Gen. John Abizaid, former CENTCOM commander who oversaw three and a half years of the American occupation of Iraq, **agreed**. "Of course it's about oil, we can't really deny that," he said during a roundtable discussion at Stanford University. These confessions validated the suspicions of foreign observers too numerous to count. Veteran security analyst Thomas Powers **observed** in the *New York Review of Books* recently:

What it was only feared the Russians might do [by invading Afghanistan in the 1980s] the Americans have actually done - they have planted themselves squarely astride the world's largest pool of oil, in a position potentially to control its movement and to coerce all the governments who depend on that oil. Americans naturally do not suspect their own motives but others do. The reaction of the Russians, the Germans, and the French in the months leading up to the war suggests that none of them wished to give Americans the power which [former National Security Adviser Zbigniew] Brzezinski had feared was the goal of the Soviets.

Apologists for the war point out lamely that the United States imports only a small fraction of its oil from Iraq, but what matters, rather obviously, is not Iraq's current exports but its reserves.

Before the invasion of Iraq in March 2003, media mogul Rupert Murdoch **said**, "The greatest thing to come out of this for the world economy, if you could put it that way, would be \$20 a barrel for oil." In the twenty-first century's version of the "Great Game" of nineteenth century imperialism, the Bush administration made a colossal gamble that Iraq could become a kind of West Germany or **South Korea** on the Persian Gulf - a federal republic with a robust, oil-exporting economy, a rising standard of living, and a set of U.S. bases that would guarantee lasting American domination of the most resource-strategic region on the planet. The political half of that gamble has already been lost, but the Bush administration has proven adamantly unwilling to accept the loss of the economic half, the oil half, without a desperate fight. Perhaps the five super-bases that the U.S. has been constructing in Iraq for as many as 20,000 troops each, plus the **ill-built** super-embassy (the largest on the planet) it has been constructing inside the Green Zone, will suffice to maintain American control over the oil reserves, even in defiance of international law and the officially stated wishes of the Iraqi people - but perhaps not.

Clearly, some in Washington still think so. Shortly before the collapse of the Iraqi oil legislation effort, Bush's Commerce Department began quietly **advertising** for an Arabic-speaking legal advisor to help it in "providing technical assistance to Iraq to create a legal and tax environment conducive to domestic and foreign investment in Iraq's key economic sectors, starting with the mineral resources sector." (Read: starting with oil.) As it happens, the job description overlaps heavily with that of the Development Fund for Iraq's existing International Advisory and Monitoring Board, whose responsibility, according to U.N. Security Council Resolution 1483, has been to see to it "that all export sales of petroleum, petroleum products, and natural gas from Iraq? shall be made consistent with prevailing international marketing best practices." Is the Commerce Department already planning for the demise of this board?

Fragile as it is, the government of Iraq enjoys international legal recognition, and the underestimated al-Maliki is evidently not without resources when it comes to asserting Iraqi sovereignty over American autonomy within Iraq's borders. In "Blackwatergate," he found a remarkable pressure point, declaring that no new law would be passed in Iraq until the Blackwater matter was resolved to his satisfaction. Nor was al-Maliki necessarily whistling in the dark when he **warned** his American critics, "We can find friends elsewhere."

The expiration date that Iraq has now set for the operation of a multinational force on its territory coincides almost exactly with the end of the Bush administration. As that date nears, the endgame question may become: How far can the administration go in repudiating its own erstwhile agenda and returning Iraq to its pre-war status - that is, to U.S.-backed Sunni domination of Iraqi domestic politics. That would, of course, result in armed Iraqi hostility to the administration's enemy of enemies in the region, Iran, and a resigned return to collaboration with the Saudi-dominated Organization of the Petroleum Exporting Countries (OPEC) in the management of the world oil market, all under a largely offshore U.S. military umbrella. Will the fallback dream now be the one the President's father entertained after Gulf War I - the creation in Baghdad of a kinder, gentler Saddam Hussein with whom, to use the classic phrase, the U.S. can "do business"?

Time will tell, but not too much time. The eerie silence of the Bush administration about oil grows all the more deafening as the price of crude climbs toward \$100 a barrel. Blood for oil may never have been a good deal, but so much blood for no oil at all may seem a far worse one.

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What All Presidential Candidates Refuse To Discuss

By Frosty Wooldridge - 10-23-2007

Twisted Thinking - Cause and Effect Reversed

Last Friday, Ann Curry, on NBC Nightly News, reported that drought-stricken Georgia's Lake Lanier, that provides water for five million people, will not last more than 79 more days at current water consumption. "What does Lake Lanier need?" she asked the reporter standing by the lake. "Lots of rain about four

months of rain," the reporter said... If Georgia stands in the cross-hairs of a water crisis today at 9,363,000 people, what will be its fate be by 2050 when its predicted population reaches 16,966,000 people?

It's the Runaway Overpopulation

What factor facing the United States stands immune from public, political and religious discussion? Short answer: runaway overpopulation as we add more than three million people to the USA annually! With signs pointing to horrific future consequences, our presidential leaders, citizens and religious elite continue on a path of population growth without responsibility, without limits and without end. They continue in denial, refutation and negation.

Let's see where that path leads us.

Worldwatch Institute, September 13, 2007 reported: Consumption of energy and many other critical resources is consistently breaking records, disrupting the climate and undermining life on the planet, according to the latest WorldWatch Institute report, Vital Signs 2007-2008. The 44 trends tracked in Vital Signs illustrate the urgent need to check consumption of energy and other resources that are contributing to the climate crisis... According to Erik Assadourian, Vital Signs Project Director, "The world is running out of time to head off catastrophic climate change, and it is essential that Europe and the rest of the international community bring pressure to bear on U.S. policy makers to address the crisis."

This summer, the European Union became a showcase for environmental devastation including tragic fires in Greece and the Canary Islands, dramatic floods in England and heat waves across the Continent.

With a global population of 6.7 billion and growing by 77 million annually humanity degrades every ecosystem beyond its capacity to sustain life:

In 2006, the world used 3.9 billion tons of oil. World oil consumption burns 84 million barrels daily. Fossil fuel usage in 2005 produced 7.6 billion tons of carbon emissions, and atmospheric concentrations of carbon dioxide reached 380 parts per million. More wood was removed from forests in 2005 than ever before.

Steel production grew 10 percent to a record 1.24 billion tons in 2006, while primary aluminum output increased to a record 33 million tons.

Meat production hit a record 276 million tons (43 kg per person) in 2006. Meat consumption is one of several factors driving soybean demand. Rapid South American expansion of soybean plantations could displace 22 million hectares of tropical forest and savanna in the next 20 years.

The rise in global seafood consumption comes even as many fish species become scarcer. The warming climate is undermining biodiversity by accelerating habitat loss, altering the timing of animal migrations and plant flowerings, and shifting some species towards the poles and to higher altitudes.

The oceans have absorbed about half of the carbon dioxide emitted by humans in the last 200 years. Climate change is altering fish migration routes, pushing up sea levels, intensifying coastal erosion, raising ocean acidity, and interfering with currents that move vital nutrients upward from the deep sea.

2,500 plants and animals in the continental United States suffer extinction every decade via habitat loss from human expansion.

Earlier this year, Bush promised to decrease oil consumption by 20 percent in the United States within ten years. "We'll reduce oil consumption by use of hybrid cars, conservation and ethanol," he said... Believe it, or not; we don't have a U.S. Immigration Strategic Plan... He failed to mention that via endless, unrelenting immigration, the U.S. expects to add 30 million people by 2017. Most Americans fail to realize this nation will add 100 million people within 35 years. While the U.S. Census Bureau tells us our population is now "only 302 million," Vanderbilt University is telling us that number is really 333 million today. Would our government lie to us? What does all of that mean?... It means "full speed ahead" just like the Titanic. Everything we're doing proves to be window dressing, cotton candy and pointless unless we deal with population stability.

It came 20 years after the publication *Our Common Future* by the Brundtland Commission, the first attempt by the UN to provide a comprehensive review of Man's impact on the environment... The authors of the latest report said there had been progress on some environmental problems in the past two decades, most notably the international agreement to protect the ozone layer. But while maintaining that they wanted to avoid presenting a "dark and gloomy scenario", they concluded: "There are no major issues raised in *Our Common Future* for which the foreseeable trends are favourable."

They said the scale of the challenge was huge and highlighted a series of problems that need to be faced and tackled by people and governments around the world before damage to the environment becomes irreversible... Increases in the world population, which has risen almost 34 per cent from 5 billion in 1987 to 6.7 billion today, have caused many of the challenges because of the demands on the Earth's natural resources... Demand, heightened by a three-fold increase in trade since 1987, means that more is now being produced than can be sustained in the long term. On average, each person needs 21.9 hectares of the Earth's surface to supply their needs whereas, it was calculated, the Earth's biological capacity is 15.7 hectares per person.

The report was critical of the lack of action by governments in protecting the environment. The response to climate change was described as "woefully inadequate" but it was regarded as one of several significant problems that need to be addressed effectively... "We appear to be living in an era in which the severity of environmental problems is increasing faster than our policy responses," it said. "To avoid the threat of catastrophic consequences in the future, we need new policy approaches to change the direction and magnitude of drivers of environmental change... "The need couldn't be more urgent and the time couldn't be more opportune, with our enhanced understanding of the challenges we face, to act now to safeguard our own survival and that of future generations."... Over-fishing was singled out as an issue that needed to be tackled as a priority. Measures to protect biodiversity, with species being forced into extinction at a rate 100 times faster than any in fossil records, were regarded as equally urgent.

Achim Steiner, executive director of UNEP, said that the international community's response to environmental issues was at times "courageous and inspiring", but all too often was inadequate... "The systematic destruction of the Earth's natural and nature-based resources has reached a point where the economic viability of economies is being challenged - and where the bill we hand to our children may prove impossible to pay," he said.

Mike Childs, of the environmental campaign group Friends of the Earth, said: "The steady degradation of the world's environment threatens the well-being of everybody on the planet.

John Sauven, executive director of Greenpeace UK, said the report illustrated the importance of living sustainably: "It is the only way to improve global life expectancy and income inequality, beat climate change, reduce deforestation and protect biodiversity."

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