

JUNE 2000 TRENEVENTS

The following articles are linked, by irrefutable fact. Each one bound into a sum total proving this ... Either the Price System game ends NOW, or Human Civilization WILL. Price or Money only functions by means of Exponential Growth. In nature, this pattern of growth is called cancer.' Warren Hern originated the idea of world population growth as a cancer. A physician, he reviewed the 5 signs of malignancy and showed that these well describe the human population. His first article on this subject was published in *Population and Environment* when I was Editor: [Posted on the *EnergyResources List* by Virginia Dean Abernethy]. Dr. Warren Hern, Director of the Boulder Abortion Clinic, is a public health physician with over 30 years' experience with women's health issues.

Science has observed how all life in nature fits into a balance with its environment or ceases to exist. Our civilization must become linked into the Web of Life. Technocracy has come to the conclusion that, for the common good and the survival of our species, North America must install a Government by Science.

We on the North American Continent have a chance, not a choice, to save our civilization. Science is the only method proved to solve physical problems. We have little time left to change our destiny by using a minimum expenditure of energy, necessary for maximum social gain. *Your Techno-critic*

Has Oil Peaked? Yes... The world has used half its reserves and is headed for shortages —

By Jeffrey J. Brown, *The Dallas Morning News*, June 11, 2006 — [<http://tinyurl.com/jc4z9>]

The Texas oil industry knows all about peak oil, because we've already gone through it.... In 1972, Texas was king of the oil world. We had increased our oil production by 40 percent during the previous 10 years at relatively low prices. Texas producers were poised for surging production as oil prices exploded and rose tenfold by 1980. The state underwent its biggest drilling boom in history. The number of producing wells jumped 14 percent by 1982. The industry consensus was that oil production would increase dramatically. To general astonishment, it fell instead, despite dramatically higher prices, frantic drilling, and improving technology. By 1982, production had dropped to almost exactly what it had been in 1962.

In 1956, M. King Hubbert, an oil geologist and native-born Texan working for Shell Oil, got up before a meeting of the American Petroleum Institute in San Antonio and made a startling statement. He predicted that Texas and lower 48 oil production would peak and start irreversible declines between 1965 and 1971. He also predicted that world oil production would peak and then decline by 2006.

Dr. Hubbert used complex mathematics to predict recoverable oil reserves, but his resulting model was quite simple: Fields, regions and, ultimately, the world tend to peak and enter irreversible declines when they have produced about half of their recoverable reserves. The underlying cause is that the largest reserves are found first because they're big and easy. The average size of discoveries shrinks over time, so one looks harder for smaller fields, as has happened in Texas.

The lower 48 peaked in 1970. Texas peaked in 1972. Alaskan oil production slowed the U.S. oil decline, but U.S. oil production never equaled its 1970 peak. Today, Prudhoe Bay, the largest American oil field, is now at about one-fifth of its peak production and declining rapidly.

Did we stop finding oil in Texas in 1973? No. However, it is impossible to replace old, very large oil fields, like the East Texas Field, with a collection of the much smaller fields we've been finding in Texas since 1972. Today, lower 48 oil production is at about half of its 1970 output, and Texas oil production is at about one-fourth of its 1972 rate.

Dr. Kenneth Deffeyes, a former associate of Dr. Hubbert's, recently published a simplified method of predicting the total amount of oil that can be produced from a region. This method is commonly called "Hubbert Linearization," or HL. HL uses two known factors: annual production and cumulative production to date to estimate total recoverable reserves.

How reliable is the HL formula as a predictor? It shows us that the lower 48 peaked when it was 52 percent depleted. Texas peak did not show up until our oil reserves were 57 percent depleted, but I suspect that can be explained by a Texas Railroad Commission regulation, which kept production equal to demand; that is, below the maximum efficient rate.

Another example is the North Sea oil fields, where production has been falling steadily since peaking in 1999 at 52 percent of total recoverable reserves. North Sea oil production is now about one-fourth below its peak. The HL formula would have foreseen this, but the 10 major oil companies working the North Sea fields did not... Using the best engineers and technology available, they predicted just before what we now know was the peak in 1999 that North Sea production would peak around 2010. They were badly mistaken, but many of these same companies are now saying that world peak oil production is decades away.

The HL model says Saudi Arabia is 58 percent depleted and the world is 48 percent depleted. This is close to where Texas and the lower 48 peaked and started irreversible declines in production. Based on the HL method and historical models, I believe Saudi Arabia and the world are now on the verge of irreversible declines in conventional oil production.

Two legendary Texas billionaires, Boone Pickens and Richard Rainwater, who share a remarkable ability to profitably predict future trends, have looked at exactly the same regional and world data plots that I have looked at, and they have reached exactly the same conclusion: that the world has used about half of its conventional crude oil reserves. Both Mr. Pickens and Mr. Rainwater have tried to warn us about the challenges we will face as a result of declining conventional oil production.

What about unconventional sources of oil? Unconventional reserves are large but can be produced only slowly because of high capital and energy costs per barrel of production. In recent years, new tar sands production has balanced declines in conventional Canadian oil production, with no net increase for exports. There will be massive efforts with unconventional oil, such as the tar and heavy oil deposits in Venezuela. However, I predict that unconventional sources of oil will only slow and not reverse the decline in total world production because of the time and energy needed to expand production of these "oils."

Without question, we have to greatly reduce our energy consumption to account for this new reality. What can we do? I have seen two sensible proposals.

The first is that we fund Social Security and Medicare with a tax on energy consumption, especially at the gas pump, offset by reducing or eliminating highly regressive payroll taxes. Doing this would unleash enormous free-market forces against profligate energy use.

The second proposal is that we electrify our freight railroads and encourage freight to go by rail instead of truck with any of a variety of economic incentives while building electric urban rail systems, such as DART, at a rate much faster than today's pace.

ETHANOL MADNESS: June 2, 2006 Issue of *Executive Intelligence Review* [http://www.larouchepub.com/other/2006/3322_ethanol_madness.html]

PART ONE: End the Great 2006 Bio-Fuels Swindle, by EIR staff

The current mania for ethanol, biodiesel fuels, "flex-fuel vehicles," and the like, is creating a financial bubble, within which is a swindle, inside of which is a slippery old methane fart waiting to explode. Members of Congress taking part in the swindle, enthusiastically or not, are going to wind up very smelly when the ethanol party ends, the investment boom collapses, and motorists indignantly demand regular gasoline again.

Why should we shift to biofuels for transportation — ethanol, for example? Well, first, we'll get 20% less gas mileage from our fuel that way. Second, we can pay a good deal more for fuel, in direct prices and subsidies; in fact, we'll be able to use a fuel whose price is inflating much faster than the price of gasoline. Third, we'll be able to spend tens of billions of dollars more a year in tax revenues, subsidizing ethanol makers, including some of the biggest global cartels. Fourth, we can use up more petrochemical energy making ethanol than we get by using it. Fifth, we can use up large volumes of scarce regions of the country, and overburden our transport infrastructure as well. Sixth, we could soon deny corn

exports to nations that need them — maybe even cut our own consumption of corn and burn it in our cars instead... And last but not least, we can delay or cut off the revival of nuclear power for industry and economic expansion; instead, we could take a major scientific and technological step backwards, a great leap back toward primitive ages when mankind burned straw for fuel.

Those are seven pretty good reasons: For the past year, they've been enough to affect the public posture of quite a number of members of Congress. In the worst example, one such Congressman, an Ohio Democrat, addressed a rally promoting the ethanol madness in his home state on May 20, and then stepped off the podium and told a questioner that he knew ethanol wouldn't work as a solution to high fuel prices. He knew, in fact, that ethanol is expensive and uses up more petrochemical energy in production than it gives back in burning; but, he said, he was promoting it because he had no better alternative. This Congressman was not just posturing, but lying to his constituents about the crucial question of inflation and the economy, and this in a depressed state where Democrats have made Republican elected officials' lying and corruption a major issue.

Another, a northern Republican governor, cheered on the start of construction of new corn-ethanol factories in his state, admitting publicly that the process was too inefficient for fuel! He claimed that the next generation of technologies would surely cure that, so let's get on with it. As the friendly drunk could tell you about ethanol, "the more you drink of it, the better it seems to work." A combination of switch grass and farm dung is alleged to make a much "stronger" fuel variety. No doubt.

And if you've just invested your constituents' money, your farm co-operative, or your nephew's pension plan in it, it becomes a virtual miracle cure. Why, a Congressional deputy leader of the Democrats proudly called for installation, in the Congressional garage, of an E-85 ethanol fuel pump. He was sure this would cure any defects of national leadership the voters have found in that body recently. Another leading Democrat thought the better part of \$50 billion was not too much to lavish on such technologies.

The great satirist Jonathan Swift painted such a scene in Gulliver's Travels, wherein scientists of the Lagado Academy strove to extract sunbeams from cucumbers for warming and to reconstitute food from dung. (*Please recognize that nuclear power is in the same class as ethanol; both are highly subsidized with billions a year annually — as all well-connected Congressmen do: Provide pork to their constituents. — Technocritic.*)

In the articles below, we show that the delusional ethanol mania gripping many defies well-established scientific principles of technology and physical economy: "Replacing" one gallon of gasoline from imported oil with a gallon of ethanol from domestic corn costs the nation \$7.24 in prices and subsidies. By one exhaustive calculation, even a small increase in the tiny fraction of transportation fuel which is ethanol now would consume most of our corn crop, leaving none to export and little to eat. A significant shift, say, to 25% of transportation fuel, as the auto "Big Three" CEOs disingenuously proposed, would plant 13% or so of the nation's entire landmass in corn for that purpose alone. The underlying physical situation is that ethanol production consumes more fossil fuel energy than ethanol gives when burned, for clear scientific reasons.

Ethanol's national average market price has made gasoline prices seem stable by comparison, catapulting from about \$1.20 a gallon in early 2005 to \$1.80 or so by September 2005, to \$2.75 this spring. Now, it is just about at the price of regular gasoline, and that is after a federal subsidy of 51 cents on every gallon, additional state subsidies and tax breaks, and some local subsidies. As the price has soared, 35 new ethanol plants have leapt up. Fermentation ethanol production has zoomed from 2.7 billion gallons in 2003 to almost 4.5 billion gallons annually now, and corn for ethanol now exceeds corn for export, by volume. The phenomenon is an ethanol investment bubble, adding at least several more "tulips" to the global commodities markets fury of the past 18 months.

This bubble has been caused and fed by direct government subsidies, and by Soviet-like orders in the 2005 Energy Act that ethanol production grow to 12 billion gallons by 2010. The White House has pitched in by ordering states to put ethanol in their gasoline blends beginning with California in 2001.

In fact, ethanol — the "alternative" to rising gas prices — has pushed the national price of gasoline up in recent months. At Senate Commerce, Science, and Transportation hearings on "gas price gouging" on May 23, witness testimony repeatedly acknowledged that government-ordered use of ethanol in gasoline has been driving up the gas price. How? By inefficient truck transport of ethanol from the Midwest to the coasts,

combined with refinery delays and costs in adding ethanol to gasoline blends, causing an additional 10- to 15-cent increase in gasoline prices in late April.

That is nothing compared to what will happen as an ethanol price bubble expands before it bursts. We show in this feature that at the center of this bubble is the food cartel — specifically, the Archer Daniels Midland conglomerate, which has gorged on the federal subsidies. ADM made 40% of all fermentation ethanol in the United States until recently; that is now down to 25%, as every local fund and cooperative tries to start an ethanol plant to tap the bubble. But ADM is itself building new biodiesel plants and reporting profit increases of 30% on the ethanol boom. Its stock is up 51% in a year.

We show that Brazil, the constantly cited model, produces ethanol en masse with virtual agricultural slave labor, more than with sugar; and the Brazilian history with ethanol in fact shows the economic/financial dangers ahead on the path of ethanol madness. Having produced ethanol fuel in cycles for 30 years with 90% of all cars produced there being capable of burning E-85, Brazil has suffered repeated hyperinflationary bubbles of ethanol prices and then of the prices of sugar. One of those cycles is going on now, and the price of ethanol within Brazil has increased 15% in the past few months, while sugar prices are at 25-year highs on global commodity markets.

The result: Once again, Brazilian motorists who were using ethanol are switching back to gasoline, and ethanol use is falling; once again, Brazilian ethanol producers are trying to get rid of tariffs and sell ethanol to the United States; once again, sugar cane ethanol producers are switching back to producing sugar, and ethanol supplies are suddenly very short, pushing the price up further. Ethanol production in Brazil fights food production, helps generate the highest inflation rate in the world, and thus fights overall consumption.

An "ethanol boom" in the United States will do all the same things, and worse. Corn, particularly the U.S. corn crop, is a far more important food source for nations and people in need than sugar.

And we show that the political promotion of the fraudulent ethanol craze, through foundations and think tanks, has been led by the neo-cons, the kindergarten of George Shultz and his Committee on the Present Danger. This is the mendacious crew who brought America the "Iraq cakewalk," the nonexistent weapons of mass destruction, the war that would pay for itself in oil revenue, and so many other of Dick Cheney's lies. Now, it's "energy independence through biofuels"; and such great anti-neo-con truth tellers as Al Gore, George Soros, and a host of liberal and labor outfits, are publicly backing Shultz's neo-cons in this swindle.

If Congress continues down this very slippery slope, with more and more billions of subsidies, the aroma of hypocrisy, and even deliberate lying for campaign contributions and votes, will cling for a long time.

PART TWO: Ethanol: Not a Kernel of Science in it, by Laurence Hech
[http://www.larouchepub.com/other/2006/3322_ethanol_no_science.html]

Here we will inform you about ethanol, why it is worse than a stupid way to replace our oil dependency.

Ethyl alcohol or ethanol (C_2H_5OH) is the second in what chemists call the homologous series of alcohols, which include methyl, ethyl, propyl, butyl, and amyl alcohol, each one distinguished from the previous by the addition of an atom of carbon and two of hydrogen (CH_2). Man has been making ethyl alcohol since long before the discovery of its chemical and structural formula. Almost any plant substance can serve as the raw material — grapes, apples, corn, grain, and potatoes are traditional ingredients. To make some yourself, start with some store-bought apple juice which has been bottled without preservatives. Put it in a clean glass container and let it sit several days. Yeast, naturally present in the air, will act on the fruit sugars, according to a process first deduced by Louis Pasteur, to change them into alcohol. This is called fermentation. Make sure you use a loosely fitting cover, because carbon dioxide gas is released in the process and could explode a tightly-closed contained.

To produce ethanol on a commercial basis, the laboratory process of fermentation and distillation must be scaled up. Remembering that our original intention is to save on the use of petroleum products, we must therefore examine the amount of gasoline and other petroleum fuels that would go into the production of ethanol as a replacement for gasoline. First, we have the production of the corn or other vegetable product that is going to provide the sugars for fermentation. Modern agriculture is a highly energy-intensive operation: tractors and farm vehicles require a lot of gasoline or diesel fuel; ammonia fertilizers use natural

gas as a feedstock; irrigation requires large amounts of electrical energy; farm work also requires human physical and mental labor, which requires energy for its maintenance. Bulk raw materials must now be transported from the farm to the still for processing and distillation — another energy-intensive process frequently using natural gas. In fact, more than the total current national consumption of natural gas would be required to power the stills to produce enough ethanol to replace our petroleum dependence.

Studies by Dr. David Pimentel of Cornell University and Tad W. Patzek of the Dept. of Civil and Environmental Engineering at Berkeley have shown that when all of these inputs are taken together, alcohol production consumes more units of fossil fuel energy than it yields when burned as fuel. Corn ethanol, switch grass ethanol, and wood alcohol (methanol) consume respectively 29%, 45%, and 57% more units of fossil-fuel energy than they give back on burning.

If we were so insane as to attempt to replace our petroleum usage with corn ethanol (the least inefficient of the choices),

it would require placing 1.8 million square miles, or 51% of the land area of the 50 states, under corn cultivation, according to the calculations of retired University of Connecticut physics professor Howard Hayden (21st Century Science & Technology, Spring 2005, pp. 10-11). However, this is a physical impossibility, for not only could we not find the arable land, we would lack the fossil fuel supply with which to generate our replacement fuel! Need we also mention that a large portion of the human population is suffering from malnutrition? Knowing that, can any moral person justify taking our productive agricultural land out of food production to feed this swindle?

The high cost of the energy inputs required for ethanol production is actually reflected in the price of the product. When all the tax credits and government subsidies are taken into account, the cost of ethanol comes to \$7.24 per gallon of "imported gasoline replaced" (see [link] for an exhaustive study). A bipartisan grouping of senators has now moved to remove the federal requirement of a 10% ethanol additive to gasoline, because it is adding 30-40 cents per gallon to the price of gas. Not surprisingly, the largest financial beneficiary of the government subsidies has been the grain cartels — Archer Daniels Midland, Cargill, and hedge fund speculators who have recently moved in on the ethanol boondoggle.

Comments:

An ethanol plant closed here in Wisconsin a few years ago because the energy cost to produce it was too high even with the subsidies. Now we have a NEW plant going to be built nearby in Minnesota. The owners of the local plant are laughing up a storm and said they are going to buy stock as soon as they can, and as soon as the construction starts, sell it... That is how money will be made on ethanol. They echo that the cost of producing ethanol is over \$7 a gallon... The article refers only to the soil required, water, electricity, storage, and transportation costs. These costs are a tip of the iceberg. As pointed out, the diversion of corn to fuel will come at the expense of food. In this area, the price of food is climbing like a homesick angel. Today, a head of lettuce is \$2.69. — Dean C., Member at Large, Technocracy Inc.

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Corn depletes topsoil of nutrients. Farmers plow cornstalks back into the soil to rebuild organic mass in soil, and they must practice crop rotation to insure future crops have fertile soil to grow in. Take that away and you are eventually growing your corn in clay. Soil deterioration is a perennial condition in the "Corn Belt". Good luck in this "something for nothing" plan to replace gasoline with ethanol, which effectively mines topsoil to maintain an obsolete concept of mass transit by personal automobile ownership. — *Techno-critic*

Peak Oil & Food (Posted on EnergyResources List, June 7, 2006, by Richard Embleton... [I originally posted this piece on ROE2 in response to one of the endless pieces putting forward yet another piece from "Energy Fairy News".]

There is something that is very important for people to get their heads around. Peak oil is not about the oil, not about gasoline and diesel and heating oil, and jet fuel. It's not about cars, SUVs, vans, trucks, buses, trains, planes, or ships... Peak oil is about food and our progressive inability, after we pass the oil peak, to

produce enough of it to feed our 6.5 billion global population. Even now, every day over 40,000 people worldwide die of starvation, malnutrition, and nutrition related diseases. Each 1% gap between global demand and global supply will increase those deaths by 10-25%.

Food production in today's world is critically dependent on oil (for pesticides, herbicides, agrichemicals, agricultural, irrigation and distribution fuels), natural gas (for artificial fertilizers), and clean water from ever scarcer and shrinking lakes and rivers and ever-shrinking underground aquifers.

A shrinking global food supply is not just a problem for the third world. Everybody has to eat, and we in the developed world tend to like to do that far more than those in the third world.

Reversion to organic farming methods not dependent on artificial fertilizers and pesticides will not be as easy as the uninitiated may think. Our commercial agricultural land is essentially toxic and sterile through our use of petrochemicals

and limited-nutrient artificial fertilizers. Commercial agriculture is essentially an export business, exporting the nutrients from the soil on which we grow the crops and never re-importing those nutrients. If the agrichemicals on which commercial agriculture relies were to disappear tomorrow, it is reliably estimated that those same commercial soils will produce between 5-20% of the crops they do today, assuming even then that there is sufficient fresh water to irrigate them. It is estimated that it would take 10-20 years or more to rebuild the natural fertility of these commercial soils. Without those agrichemicals, that means a drop of 80-95% in the productivity of those soils until their natural fertility is restored.

The other key factor, of course, is crop pests. Without oil-derived pesticides, crops will be susceptible to invasion by those pests in numbers possibly never seen before. Through our use of pesticides, we have helped those pests evolve resistance. Commercial farmers today use 33 times as much pesticides as just three decades ago and yet lose 25% more of their crop to pests than they did then. We are already losing the battle against crop pests. When the pesticides are gone, we will lose the war. That same use of pesticides has also prevented our crops from evolving their natural defenses against pests. Our current crops generally have very low survival potential without those pesticides. All of this, of course, parallels our own weakened immune systems because of the over-use of antibiotics, vaccines, and other modern medicines, all of which take over the immune response rather than strengthen the immune system.

In closing, this is the important point. People will not really "get it" about peak oil until they get their heads away from worrying about transportation fuels and understand the implications for food in our world of 6.5 billion people.

WORLD GRAIN STOCKS FALL TO 57 DAYS OF CONSUMPTION:

Grain Prices Starting to Rise, June 15, 2006, by Lester R. Brown, Founder and President of Earth Policy Institute

This year's world grain harvest is projected to fall short of consumption by 61 million tons, marking the sixth time in the last seven years that production has failed to satisfy demand. As a result of these shortfalls, world carryover stocks at the end of this crop year are projected to drop to 57 days of consumption, the shortest buffer since the 56-day-low in 1972 that triggered a doubling of grain prices.

World carryover stocks of grain, the amount in the bin when the next harvest begins, are the most basic measure of food security. Whenever stocks drop below 60 days of consumption, prices begin to rise. It thus came as no surprise when the U.S. Department of Agriculture (USDA) projected in its June 9 world crop report that this year's wheat prices will be up by 14 percent and corn prices up by 22 percent over last year's... With carryover stocks of grain at the lowest level in 34 years, the world may soon be facing high grain and oil prices at the same time.

For entire text, see: [<http://www.earthpolicy.org/Indicators/Grain/2006.htm>]
For data, see: [http://www.earthpolicy.org/Indicators/Grain/2006_data.htm]

Outsourcing is Climbing Skills Ladder, by Steve Lohr, *New York Times*, February 16, 2006

The globalization of work tends to start from the bottom up. The first jobs to be moved abroad are typically simple assembly tasks, followed by manufacturing, and later, skilled work like computer programming. At the end of this progression is the work done by scientists and engineers in research and development laboratories.

A new study that will be presented today to the National Academies, the nation's leading advisory groups on science and technology, suggests that more and more research work at corporations will be sent to fast-growing economies with strong education systems, like China and India... In a survey of more than 200 multinational corporations on their research center decisions, 38 percent said they planned to "change substantially" the worldwide distribution of their research and development work over the next three years with the booming markets of China and India and their world-class scientists, attracting the greatest increase in projects. Whether placing research centers in their home countries or overseas, the study said, companies often use similar criteria. The quality of scientists and engineers and their proximity to research centers are crucial.

The study contended that lower labor costs in emerging markets are not the major reason for hiring researchers overseas, though they are a consideration. Tax incentives do not matter much, it said... Instead, the report found that multinational corporations were global shoppers for talent. The companies want to nurture close links with leading universities in emerging markets to work with professors and to hire promising graduates.

"The story comes through loud and clear in the data," said Marie Thursby, an author of the study and a professor at Georgia Tech's College of Management. "You have to have an environment that fosters the development of a high-quality work force and productive collaboration between corporations and universities if America wants to maintain a competitive advantage in research and development."

Dow Chemical is one company that plans to invest heavily in new research and development centers in China and India. It is building a research center in Shanghai, which will employ 600 technical workers when it is completed next year. Dow is also finishing plans for a large installation in India, said William F. Banholzer, Dow's chief technology officer... Today, the company employs 5,700 scientists worldwide, about 4,000 of them in the United States and Canada, and most of the rest in Europe, but the moves overseas will alter that. "There will be a major shift for us," Mr. Banholzer said.

The swift economic growth in China and India, he said, is part of the appeal because products and processes often have to be tailored for local conditions. The rising skill of the scientists abroad is another reason. "There are so many smart people over there," Mr. Banholzer said. "There is no monopoly on brains, and none on education either."

Such views were echoed by other senior technology executives, whose companies are increasing their research employment abroad. "We go with the flow, to find the best minds we can anywhere in the world," said Nicholas M. Donofrio, executive vice president for technology and innovation at I.B.M., which first set up research labs in India and China in the 1990s. The company is announcing today that it is opening a software and services lab in Bangalore, India.

At Hewlett-Packard, which opened an Indian lab in 2002 and is starting one in China, Richard H. Lampman, senior vice president for research, points to the spread of innovation around the world. "If your company is going to be a global leader, you have to understand what's going on in the rest of the world," he said.

In numerical terms, scientists and engineers in research labs represent a relatively small part of the national work force. Like the debate about offshore outsourcing in general, the trend, which may point to a loss of competitiveness, is more significant than the quality of jobs involved.

The American executives who are planning to send work abroad express concern about what they regard as an incipient erosion of scientific prowess in this country, pointing to the lagging math and science proficiency of American high school students and the reluctance of some college graduates to pursue careers in science and engineering.

"For a company, the reality is that we have a lot of options," Mr. Banholzer of Dow Chemical said. "But my personal worry is that an educated, innovative science and engineering work force is vital to the economy. If that slips, it is going to hurt the United States in the long run."

The corporate research survey was financed by the Ewing Marion Kauffman Foundation, which supports studies on innovation. It was designed and written by Ms. Thursby, who is also a research associate of the National Bureau of Economic Research, and her husband, Jerry Thursby, who is chairman of the economics department at Emory University in Atlanta.

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Outsourcing Smarts — The Death of US Engineering, by Paul Craig Roberts *
[<http://www.counterpunch.org/roberts06062006.html>]

The May payroll jobs report released June 2 by the Bureau of Labor Statistics confirms the jobs pattern for the 21st century US economy: employment growth is limited to domestic services... In May, the economy created only 67,000 private sector jobs. Job estimates for the previous two months were reduced by 37,000.

The new jobs are as follows: professional and business services, 27,000; education and health services, 41,000; waitresses and bartenders, 10,000. Manufacturing lost 14,000 jobs... Total hours worked in the private sector declined in

May. Manufacturing hours worked are 6.6 percent less than when the recovery began four and one-half years ago.

American economists and policymakers are in denial about the effect of jobs offshoring on US employment. Corporate lobbyists have purchased fraudulent studies from economists that claim offshoring results in more US employment rather than less. The same lobbyists have spread disinformation that the US does not graduate enough engineers and that they must import foreigners on work visas. As part of the immigration bill, lobbyists are currently pushing an expansion in annual H-1B work visas from 65,000 to 115,000.

The alleged "shortage" of US engineering graduates is inconsistent with reports from Duke University that 30 to 40 percent of students in its master's of engineering management program accept jobs outside the profession. About one-third of engineering graduates from MIT go into careers outside their field. Job outsourcing and work visas for foreign engineers are reducing career opportunities for American engineering graduates and also reducing salary scales... When employers allege a shortage of engineers, they mean that there is a shortage of American graduates who will work for the low salaries that foreigners will accept. Americans are simply being forced out of the engineering professions by jobs outsourcing and the importation of foreigners on work visas. Corporate lobbyists and their hired economists are destroying the American engineering professions.

American engineering is also under pressure because corporations have moved manufacturing offshore. Design, research, and development are now following manufacturing offshore. A country that doesn't make things doesn't need engineers and designers. Corporations that have moved manufacturing offshore fund R&D in the countries where their plants have been relocated. Engineering curriculums are demanding. The rewards to the effort are being squeezed out by jobs offshoring and work visas. If the current policy continues of substituting foreign engineers for American engineers, the profession will die in the US.

* Paul Craig Roberts, Assistant Secretary of the Treasury in the Reagan administration; Assistant Editor of the *Wall Street Journal* editorial page; Contributing Editor of *National Review*; Co-author of "The Tyranny of Good Intentions."

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The following observations posted by Lawrence B. Crowell on the EnergyResource site are the same as commentary by Howard Scott on a DVD available from Technocracy Inc., 2475 Harksell Road, Ferndale,

WA 98248. Howard Scott organized the Technical Alliance for the Energy Survey of North America to confirm that our civilization needed a new paradigm of governance, which is defined as " Science vs. Chaos."

"During the 1980s I worked on intelligence programs and the like. One of the first astounding things I learned was that the whole cold war was a rigged game. In other words, there was never any reason for any of the mass nuclear weaponization programs. The whole thing was fake, but it made a lot of money for the industries. These industries faced a problem after WW II. The only thing that gave a shred of basis for it was that the Soviets were playing the same [Price System — (PC)] game, but we had the higher ground from the beginning.

"Of course, one has to cast similar eyes on the war on terror, which linguistically makes no sense since terror is not a body. Yet here we go, folks, the money lines are drawn, and if you are not in on the take, then you are one big chump. The biggest industry is computer security ...

" The economy of this nation is largely fake. Looking at Main Street, what I can see is that the fastest growing industries are casinos and payday loan shops. Everything else looks second best. The whole thing looks like some Disneyland display of something posing as an economy ... The pension system, the private health system, and the whole bit is actuarially unsound.

"Oh, well, a species comes into being by evolutionary pressures, those circumstances change, and the species goes extinct. What's the problem? In 50 million years we are all fossils and dust, and dust will not count for anything with whatever is going on then." L. B. Crowell ends with this Grateful Dead quote: "I'm going to hell in a bucket, but at least I'm enjoying the ride..."

The easiest path is surrendering to an overwhelming Truth. Technocracy's members are a rare few. We have chosen, for over 67 yrs., to reach out and attempt to educate North Americans, that Government by Science is necessary for civilization to survive on this Continent. NASA is always successful using Science for complex Planetary exploration, Space Shuttles explode when cost accounting is more important than the lives of the Shuttle Crews.

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