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**Reaching Our Peak Oil Supply**

By Rod Dreher  
The Dallas Morning News

Sunday 25 November 2007

It cost more than \$40 to fill up my Honda Accord last week. That's a pain, but not one I have to suffer often. Not only does the Honda get good gas mileage, I live close to my downtown job, so I put maybe 6,000 miles a year on the car. The price of oil will have to go up a lot more before my wallet feels the burn - at the gas pump, at least.

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But the price of oil affects far more than our daily commutes. Our entire consumer economy is built on the idea that oil will be relatively inexpensive and infinitely available.

A reliable and affordable supply of oil makes globalization possible. Wal-Mart, for example, wouldn't be able to fill its shelves with consumer goods made for less in overseas factories if not for the ability to ship these products inexpensively. Within our own borders, food is cheap and plentiful in large part because oil is. One reason we've built bigger houses - the average house size has doubled since the 1950s - is because we can afford to heat and cool them.

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In fact, cheap oil has made development in Dallas and the entire Sunbelt possible.

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But what if it's ending? The authoritative International Energy Agency recently warned that the price of oil would remain high for the foreseeable future because of supply shortages. China and India are developing rapidly and consuming vast amounts of oil.

World supply can barely keep up with demand - a problem the IEA blames primarily on human failures. IEA forecasts that China and India alone will add about 13 million barrels a day to the global demand by 2030.

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But the IEA forecasts world oil supply at 116 million barrels a day by 2030, up from 85 million barrels a day now - enough to meet expected demand. Some top oil company CEOs disagree. Christophe de Margerie, chief of the French oil giant Total, said in late October that a supply level of even 100 million barrels a day - barely enough to cover anticipated growth from China and India alone - is "optimistic."

"It is not my view. It is the industry view, or the view of those who like to speak clearly, honestly and not ... just try to please people," Mr. de Margerie said.

And ConocoPhillips CEO James Mulva told a financial conference earlier this month: "Demand will be going up, but it will be constrained by supply. I don't think we are going to see the supply going over 100 million barrels a day, and the reason is: Where is all that going to come from?"

That's the question adherents to peak-oil theory ask. They argue that the world either has or soon will have reached the maximum output level of its oil reserves and that supply can only decline from here on out - even as demand skyrockets.

Though some dismiss them as crude-oil Cassandras, the peak-oilers are not wild-eyed pessimists. Their number includes men like T. Boone Pickens, the Dallas oil tycoon, and Houston's Matt Simmons, who founded the world's largest energy investment banking company. They point to hard data indicating that the world is quite simply running out of oil and doing so quickly ([www.theoil Drum.com](http://www.theoil Drum.com) and [www.energybulletin.net](http://www.energybulletin.net) are two good Web sites compiling peak-oil news, analysis and information).

If they're right, peak oil poses a far more critical challenge to our civilization than global warming. The modern industrial world cannot function in any recognizable form without cheap and plentiful oil. Stu Hart, a Cornell management professor, warned on public radio recently that "we're in the midst of the crash of the system" - meaning that absent breakthroughs in the way the world meets its energy needs, we are in for rough times.

What would life after peak oil mean for Dallas and its surrounding suburbs, a metropolis created by the availability of cheap energy?

Cars would be an unaffordable luxury for most, making life in suburbia difficult, perhaps impossible, to sustain. Likewise, air travel and shipping likely would be sharply curtailed as too costly, causing Dallas/Fort Worth International Airport, a major regional economic engine, to slow substantially.

Truck transport, too, would diminish, causing a sharp slowdown in the consumer economy and, crucially, making the kind of grocery-store bounty we now enjoy a thing of the past. And with a general rise in energy costs blasting electric bills into the stratosphere, we may all have to get used to - wait for it - life without air conditioning.

Jeffrey Brown, a Richardson geologist who has been active in the peak-oil debate, advises far-sighted folks to abandon the outlying suburbs and exurbs and move closer to the city center. "The smart money has been moving in," he said. "The closer you are to job centers, the more stable the property values have been. That will continue."

Post-peak-oil conditions would reverse globalization, forcing a return to intensely local agriculture and local manufacturing. The stores and services that communities need in order to carry on everyday life would emerge in neighborhoods, as in the pre-automobile era. Cities would empty out, with rural areas and small towns in agriculturally rich areas reviving. Culturally, all Americans would have to undergo a Great Relearning of skills and social habits that our ancestors developed to survive in community.

"My hopeful view is that we'll be living like we did at the turn of the 20th century, but with computers," Mr. Brown said. And he's right: Americans have done this before and can do it again, if scientists don't come up with a solution before the oil spigot starts to sputter.

But no one should be under the romantic illusion that life would be easy then or that the transition would be smooth. We will be poor. Our sons probably would be sent overseas to fight resource wars. Back home, regions of America where tens of millions of people live will

be uninhabitable - especially the Southwest and much of suburbia. The economic contraction and social dislocation will be, in many cases, nothing short of catastrophic and will produce political upheaval. Radical conditions easily could produce radicalism.

Which could explain why so many people aren't paying attention to peak-oil concerns; we have a financial and emotional investment in the status quo.

As Matt Simmons pointed out at a peak-oil conference in Houston this fall, if global warming predictions prove out, it won't be a serious crisis for the planet until many decades into the future. If peak-oil fears prove out, the crisis could be upon us in very short order - and indeed may already have begun.

It is possible that we haven't reached peak oil yet - nobody can say for sure, because governments and oil companies keep much data confidential - but the signs of the times are not encouraging. Now is not the time for survivalist panic or denial-based paralysis.

It is time, however, for discerning people - not only decision-makers, but every one of us - to start talking about and urgently planning for a peak-oil future. It may come sooner, it may come later, but it's coming.

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*Rod Dreher is a Dallas Morning News editorial columnist.*

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### **Energy Expert Udall Looks to the Future**

By Scott Condon  
The Aspen Times

Monday 26 November 2007

#### ***"Peak oil" will soon dwarf global warming as public concern.***

Aspen - After 13 years at the helm of the Community Office for Resource Efficiency, Randy Udall stepped down this month.

As the director of the department created by the governments of Aspen and Pitkin County, he helped create numerous innovative, conservation-minded programs.

Fortunately, the longtime Carbondale resident is staying put and will remain a leading voice in the region on energy issues. Udall is in high demand as a speaker at energy conferences and with conservation groups because of his grasp of the changing picture on our fossil fuel lifestyle.

Prior to joining CORE, Udall was a college drop-out who worked as a carpenter and an Outward Bound instructor before becoming a freelance writer who concentrated on energy and environmental projects.

"I wrote my first feature on global warming in 1987," he said. "The potential impacts I mentioned - melting glaciers, threats to pikas and polar bears, reduced Colorado River runoff, longer growing seasons, intense droughts and longer fire seasons - seemed, then, to resemble science fiction.

"Of course, all that and more has come to pass," he said.

The Aspen Times caught up with Udall last week for an exit interview on some of the most

pressing energy-related issues facing the country and the region.

**Aspen Times:** CORE started the unique Renewable Energy Mitigation Program in 2000. Please summarize how that works. Has it been a success?

**Randy Udall:** The program requires new homes in Pitkin County to meet a strict energy "budget." Homes that exceed that budget, because they want to use fossil fuels to snowmelt a driveway or heat an outdoor pool, pay a renewable energy mitigation fee. In addition, every home over a certain size must install some sort of renewable energy system, or pay an additional smaller fee. The REMP fund has raised \$6 million since its inception, and the fees themselves represent the world's stiffest carbon dioxide tax. We use the money to install energy efficiency systems or renewable energy systems on affordable housing projects, public buildings, schools; to buy wind power; and to fund rebates on efficient appliances and solar systems.

**AT:** Does it send the wrong message to allow people to consume more energy by paying a fee?

**RU:** Are we selling papal indulgences, a license to pollute? Perhaps, but we were careful to set the fees high enough that we avoid at least three pounds of pollution for every pound produced.

**AT:** What accomplishments are you most proud of from your tenure with CORE?

**RU:** The clean energy transition will take decades, but we have made a start here in the Roaring Fork Valley. Awareness of energy and climate issues is at an all-time high. We were the first valley in the state to wholeheartedly embrace wind energy. Ten years ago, when we started our wind power pioneers program with Holy Cross Energy, there was not a single utility-scale turbine in the state. This year \$1 billion of wind will be installed in Colorado. We were the first place in the country to offer a solar production incentive program. I'm also proud of having worked with three local electric utilities that have received national recognition for their work on renewable energy. There are 2,000 municipal utilities in the U.S. Aspen Municipal is buying four times more wind energy, as a percentage of its load, than the next leading wind champion.

**AT:** If you would have had a mandate to do whatever you felt necessary with CORE, what would have it been?

**RU:** We were blessed with exceptional political support from the get-go. A long list of mayors and council members (from the city of Aspen), and county commissioners (from Pitkin County) and government staff avidly supported our work. We would not have gained an inch without it. Are bolder measures needed? Yes. It's my fault for not pushing them, but will see them in the years ahead.

**AT:** You have spent a considerable amount of time educating people about peak oil. Do people "get it" and are they willing to make adjustments to their lifestyles?

**RU:** Our peak oil conference in Houston in October was the largest in the world this year. The Wall Street Journal ran a cover article on the topic this week. People are beginning to understand that energy - not the yen, euro or dollar - is the original currency, the source of all wealth. Most of the Houston presenters were Republicans, and the audience included many financial managers. Visit [www.theoil drum.com](http://www.theoil drum.com), if you are interested in following the evolving discussion. Global oil production may have already peaked; if not, it will do so in the next four years. This topic is likely to soon dwarf climate change as a matter of public concern.

**AT:** With all of the information you have absorbed about climate change, how do you think the central mountains of Colorado will be affected by 2100?

**RU:** I moved to Colorado in 1973. During the following decade, I skied from New Mexico to Wyoming. If you spend time in the mountains or have a garden, you have already seen dramatic changes in our climate. We are clicking-and-dragging Colorado south, giving it the climate of New Mexico. What will happen to Oklahoma? Who cares! But many of us love Colorado, and celebrate snow. Snow is the West's most under-appreciated resource. Unfortunately, "Snowmass" peak in August no longer deserves the name. The ironic good news is that peak oil is going to T-bone climate change, and make its resolution easier than we currently imagine.

**AT:** Nearly every "to-do" list to battle global warming promotes the use of clean-burning natural gas. Is western Colorado destined to be a sacrifice zone despite the concerns of many environmental organizations and citizens in the region?

**RU:** The short answer is yes. There are many things the gas industry can do to reduce its impact, and it has done some of them already. Not voluntarily, but because of brave citizen activists urging industry to "do it right." That said, we are going to see 150,000 wells drilled here over the next 30 years. The Piceance is destined to be one of the nation's top gas fields. This year \$2 billion will be taken out of the basin, most of it exported to other, energy-poor states, which will not be able to repay the favor later. This is why we ought to increase state severance tax rates to the same level they are in Wyoming and New Mexico. The way things currently are, we are leaving \$1 million in uncollected revenue on the table every day. It's an outrage.

**AT:** You have been critical of the potential for oil shale. What problems do you see there?

**RU:** I'm not critical of oil shale; I'm skeptical, which is appropriate since it provides just 1/10,000 of global energy, and global production has fallen by half since 1990. I'll bring you a dump truck of oil shale today. You will soon discover that 20,000 pounds of oil shale contains only as much energy as 6,000 pounds of firewood or 3,000 pounds of coal. The difference is that once you have burned the oil shale, you have 15,000 pounds of ash to deal with. My "gift" has become household hazardous waste. It's true that there's a trillion tons of this stuff in Colorado. A one-pound chunk of oil shale has the same energy content as a one-pound potato. When it comes to energy, quality always trumps quantity. If Shell and Chevron want to spend their own money investigating oil shale, more power to them. Let's not subsidize it, however. To date, Shell has spent \$200 million to produce 2,000 barrels. That's about \$100,000 per barrel, a bit above the market price. In short, the Utes never bothered with oil shale, although it outcrops everywhere, and neither will we, at least not until things get really desperate.

**AT:** What is the realistic potential for alternative energy sources, particularly solar and wind?

**RU:** Solar and wind are the world's fastest growing energy sources, but still tiny in the grand scheme of things. Both resources are enormous, but these are energy fluxes not fuels, and too few people understand the difference. (Sunlight through your window is a flux, a chunk of oak is a fuel.) Wind provides about 10 of every 1,000 kilowatt-hours consumed in the U.S.; solar about 1. But both provide far more energy than oil shale! Their futures are very bright indeed. But we are in a race against time right now. We need to scale them up very rapidly in the decades ahead. On a personal level, living with solar power is a treat. Try it. Get your house out of intensive care.

**AT:** What's next in your career?

**RU:** Odd jobs.

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## **Apocalyptic Vision of a Post-Fossil Fuel World**

By Paul Eccleston  
The Telegraph UK

Thursday 22 November 2007

### ***An apocalyptic vision of how the world will look after the oil runs out has been given by a top scientist.***

Richard Heinberg, one of the world's leading experts on oil reserves, warned that the lives of billions of people were threatened by a food crisis caused by our dependence on dwindling supplies of fossil fuels.

Higher oil prices, [the loss of farmland to biofuel crops](#), climate change and the loss of natural resources would combine with population growth to create an unprecedented food shortage, he claimed.

The only way to avoid a world food crisis was a planned and rapid reduction of fossil fuel use - oil, coal and gas - and a switch to more organic methods in the growing and delivery of food. It would mean a return to living off the land not seen for 150 years.

The stark predictions were made by Heinberg in a lecture to the Soil Association in London.

Heinberg, an author and former advisor to the National Petroleum Council, specialises in 'Peak Oil' - the point where oil production reaches its maximum and begins to decline - and the implications it has for climate change and food security.

He said for thousands of years, until the 19th century and the onset of the Industrial Revolution, all food production had been local. In good years there was enough to eat and to store and in bad years there was starvation.

The invention of the petrol engine increased the amount of arable land available to grow food, the size and efficiency of farm machinery improved, and better pesticides were developed - all of which contributed to a better food supply.

As food became more plentiful and cheap, the threat of famine disappeared and obesity became more widespread than hunger. Food, grain, meat and vegetables began to be exported around the world and the world population increased six-fold.

By the 1960s industrial-chemical practices had been exported to the third world and in the next half century food production tripled - but at an unrecognised cost of water and soil pollution and enormous environmental damage.

Heinberg said that, unfortunately, it was all unsustainable and the abundance of food depended on depleting, non-renewable fossil fuels whose burning produced climate-altering carbon dioxide.

The depletion of oil stocks, the demand for biofuels as an alternative, environmental degradation and extreme weather caused by climate change, were coming together to pose massive problems for world food production.

The situation would be made worse by a shortage of fresh drinking water. According to UN estimates, one third of the world's population lived in areas with water shortages and 1.1 billion people lack access to safe drinking water. The situation was expected to worsen

dramatically over the next few decades.

While the human population had tripled in the 20th century, the use of renewable water resources had grown six-fold.

The UN Environment Program had concluded that the planet's water, land, air, plants, animals and fish stocks were all in "inexorable decline" much of it due to agriculture, which constituted the greatest single source of human impact on the biosphere.

Heinberg said that to get to the heart of the crisis a comprehensive transformation of world agriculture was needed - greater than anything seen in many decades - which would produce a system that was not reliant on fossil fuels.

He cited Cuba as an example of what could be achieved. In the 1980s it had become reliant on cheap fuel supplied by Russia and was using more agrochemicals per acre than even the US. But after the fall of communism, supplies dried up. The average Cuban lost 20lbs in weight, living standards collapsed and malnutrition became widespread.

Cuban authorities responded by redesigning the food supply system. Large state-owned farms were broken up and given to families and they were encouraged to form co-operatives, biological methods were used for pest control, oxen replaced tractors, urban vegetable gardens flourished and people began to keep chickens and rabbits for food. Twenty years later food production was 90 per cent of its former levels.

Heinberg said what was needed was a return to ecological organic farming methods which would require the transformation of societies.

And with oil supplies rapidly running out the full resources of national governments would be needed to achieve it.

The amount of food transportation would have to be reduced, food would need to be grown in and around cities, and producers and consumers would need to live closer together.

The use of pesticides would have to be reduced in packaging and processing, draft animals would be reintroduced and governments would have to provide incentives for people to return to an agricultural life. Land reform would be needed to enable smallholders and farming co-ops to work their own plots and population growth would have to be curbed.

"All of this constitutes a gargantuan task, but the alternatives - doing nothing or attempting to solve our food-production problems simply by applying mere techno-fixes - will almost certainly lead to dire consequences," he said.

"All of the worrisome trends mentioned earlier would intensify to the point that the human carrying capacity of Earth would be degraded significantly, and perhaps to a large degree permanently."

Heinberg added: "The transition to a fossil-fuel-free food system does not constitute a distant utopian proposal. It is an unavoidable, immediate, and immense challenge that will call for unprecedented levels of creativity at all levels of society.

"A hundred years from now, everyone will be eating what we today would define as organic food, whether or not we act.

"But what we do now will determine how many will be eating, what state of health will be enjoyed by those future generations, and whether they will live in a ruined cinder of a world, or one that is in the process of being renewed and replenished."



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