

## Cheaper Oil Hastens Our Approach to "Peak Oil"

Hubbert's Peak, or Peak Oil, is a controversial theory based on the fact that there is a finite amount of oil on earth to be discovered and recovered. In 1956 Marion Hubbert, a geophysicist and professor, described the rise and fall of the availability of a resource using a mathematical equation. Simply put, peak oil theory states that consumption of finite resources, such as petroleum, will generally occur at a rate that follows a bell curve. According to Hubbert, the last half of the 19th century and most of the 20th century constitute the first half of the curve for the world's supply of oil. The theory of peak oil can be applied to an oil field, a nation or the whole world.

In 1956 Hubbert predicted that the United States' oil production would peak around 1970, which proved to be correct. He also predicted that world oil production would peak in about 50 years, or around 2006. Therein lays the controversy. Some say that we have reached our peak; others say that it is imminent, with estimates of reaching it by 2010 or 2012. Plenty of others say we have another 20 to 50 years before we reach peak, if we take into account "unconventional sources" of oil. What is unconventional and what is not worthy of the destruction and energy required to retrieve it is debatable and will change over time as our desire to produce more oil intensifies in the light of declining supplies from conventional sources. For example, there are huge supplies of oil in sands in Canada. The energy required to dig out the sands, then to heat it enough to free up the oil from the sands, let alone to refine and transport it, adds significantly to what the end price per barrel or per gallon would eventually be and diminishes greatly the net energy recovered from the sands.

Today the world uses 85 million barrels of oil a day, or, more than 30 billion barrels a year. Many are comforted by the 1.5 trillion barrels that are estimated to exist in "proven reserves". However, these are not literally proven and are sometimes found to be far different from what was originally predicted. However, assuming that this number is close to accurate, at 30 billion barrels per year, this is only 50 years of supply—total. So, have we peaked, will we peak in 5 years or in 25? Rather than debating when this will occur, we need to look to how we will get over our dependence on oil. We need to identify what uses are

particularly suited to oil, for which we do not have viable alternatives, and use the oil there, for its "best and highest" use.

There is more discussion than ever about going green, global warming, wind farm development and solar power. But, sadly, the sum of all of these good intentions is tiny because the reality of the situation has not "caught on". It is not all doom and gloom, though. Wind and solar and smarter practices can displace a significant amount of the 85 million barrels per day (and growing) of oil that the world uses. There is no question that a percentage of that is wasted each and every day, never to exist as oil on earth again. Instead, we celebrate that gasoline prices are down somewhat and drive more. We need to develop alternatives before we are coming down off the peak and prices are rising. We need to change our behavior now to both delay and soften the downward slope.

To learn more about the theory of peak oil, go to [www.peakoil.net](http://www.peakoil.net) the web site for the Association for the Study of Peak Oil and Gas.

## Buildings Are an Untapped Opportunity to Shift

Everything under a roof—your home, your workplace, the grocery store, the mall—offers opportunities to make lasting progress in moving away from the use of fossil fuels. New buildings offer the chance to "get it right the first time." In certain areas of the country, building booms have been underway for years and show little signs of slowing, in spite of much discussion about slowed housing sales. The key word here is lasting. Unlike vehicles, a buildings' impact (positive or negative) usually will last for many years, often decades. Also, a building may be visited and observed by thousands of individuals who take away their impressions, good or bad.



More and more communities are passing ordinances requiring that construction of new buildings be carried out in accordance with LEED standards. LEED, or Leadership in Energy and Environmental Design, is a program that gives planners, architects, and builders guidelines to follow to reduce the environmental impact of new construction (there are also LEED standards for

renovations and upgrading of existing buildings). While the LEED standards are regarded as expensive to implement, or too different (if it isn't broken don't fix it) to bother with by some, others regard LEED as just a starting point. It's not only government that has a growing interest in LEED. The U.S. Green Building Council, the developers of the LEED program, report that as of September 2006 there were 669 LEED certified buildings; but there was a backlog of 4,926 buildings that had filed for LEED ratings, indicating a strong upward trend in the use of these standards. The trend is getting so much attention from investors thinking of the trillions of dollars worth of commercial real estate, that the difference between buildings constructed with LEED versus those that are not, are being compared to the massive shift experienced in the 1950s and 1960s where central air conditioning created such a strong preference (like the green building will now) that the value of buildings not equipped with air conditioning (or innovative energy saving and environmentally friendly LEED standards, today) fell drastically, creating an investment windfall for those who were looking to the future and huge losses for those that were complacent and happy with the status quo.

Better building practices mean savings in heating and cooling costs, reduced maintenance and repair costs, energy saved, reduced environmental impacts and good will gained with the public by being part of the solution. Encourage the use of green building practices whenever and wherever you can.

To learn more about the LEED standards and green building in general go to: [www.usgbc.org/](http://www.usgbc.org/) the web site for the U.S. Building Council.

## Energy Shift Introduces a New Product – Java Logs



Energy Shift is all about providing people with tools for moving away from fossil fuel use. Those tools may be in the form of knowledge and information or devices that reduce or eliminate our rate of energy consumption. Maintaining our focus on simple, inexpensive items (we strongly encourage the use of residential solar heating or hybrid cars and such, but you would not purchase those things through us), we strive to introduce small changes in everyday living that cumulatively can have a huge benefit. From time to time, Energy Shift may choose to add a new item it finds worthy of promoting. That time has come.

Energy Shift is excited about a great alternative to wood or manufactured logs (which are made of sawdust and paraffin wax) for your fireplace – Java Logs. Some devoted environmentalists may have given up on using the fireplace. Others may love using their fireplace but worry about the heated air going up the chimney all night. Still, more are happily tossing wood logs on the fire, enjoying the familiar warmth and good feelings they get from being near a fire, not considering the environmental consequences or the expense of sending air, they have paid to heat, up the chimney. Energy Shift has found an alternative that will satisfy your needs. The Java-Log is a manufactured log made of spent coffee grounds, vegetable-based wax, and molasses. The result is a truly better burning product (25% more energy than wood), far cleaner burning (including reduced carbon dioxide – a widely accepted link to climate change) and produces big, bright flames for a fire that lasts about three hours.

One challenge to Energy Shift is to provide ideas and products that readers will embrace as innovative and worth trying rather than mundane, and frankly, something they don't want to think about. Java-Log is fun and clever. Users feel good about the coffee grounds diverted from the landfill; the “no-chemical” smell when using them; and the reduced carbon dioxide, carbon monoxide, particulates, creosote, and ash residual compared with wood fires. Because we are so enthusiastic about this product, we are providing each Energy Shift subscriber with a coupon to use at a grocery store in your area. You can go to [www.java-log.com](http://www.java-log.com) to locate Java-log in your city via their handy on-line city search store locator. If you would like to send a Java-Log (or a case of them) to someone's doorstep, place your order through Energy Shift.

### Java-log Quick Facts:

- ✓ 11x cleaner than wood
- ✓ Fewer air emissions (87% less carbon monoxide)
- ✓ Renewable energy
- ✓ Safe chimney use (less creosote)
- ✓ Better/brighter/natural flames
- ✓ Easy to light
- ✓ Diverts landfill waste (42 million kg per year)
- ✓ 100% recycled packaging
- ✓ Saves trees

**Washington State Testimonial** – “Your product is superior! Nothing can match it. In my opinion, it's clean, warm and environmentally great.”

**Interconnectedness** (in'ter ke nek'tid nis), n. the quality or condition of being interconnected; interrelatedness; the interconnectedness of all nations working toward world peace. [1920-25; INTERCONNECT + -ED + -NESS] From the Random House Dictionary of the English Language, Second Edition, Unabridged.

Many of us don't think too much about food and cooking and how they relate to energy consumption. Some people take care to place lids on pans while they are cooking, to hold in the heat. Over time, this practice can make a substantial difference in the amount of gas or electricity used. The benefits are quicker prep time and energy savings. Others do not want to risk changing their tried and true methods for a result they are seeking (e.g., many insist pasta must be cooked without the lid on). Of much greater impact is what we choose to eat and when. Not too many years ago the food at the grocery store varied depending on what was "in season" -- apples in the fall, peaches and melons in the summer, citrus in the winter. Those days are long gone. Trucking and flying our food long distances is commonplace. Significant amounts of energy are expended bringing items to market. This is convenient and we have all gotten used to this luxury; but it is just that, a luxury. Imported wine and cheese used to be something consciously selected for a special event. Now, these things are considered ordinary. If you live in an urban area, produce that came from 4,000 miles away is often indistinguishable from produce that came from 50 or 100 miles away. Support local growers and producers of foods in your area through such actions as regularly shopping at your local farmers market. Become active in dampening the demand that keeps the practice of shipping food thousands of miles profitable.

## Reliance on Coal May Solve One Problem Only to Create Others

We mined a lot more coal in 2006 than in 2005, or the year before that. Some people think that the best alternative to imported oil is to ramp up our use of coal. After all, it is spread nicely throughout different regions of the country, it is abundant, and we don't have to rely on other governments or foreign companies to get it—sounds great.

What the proponents of increased coal use in the U.S. are neglecting to adequately consider is the fact that benzene, nitrogen oxides, sulfur dioxides, carbon dioxides and mercury are released whenever coal is burned. Just over half of the U.S. population lives in areas where the air is directly impacted by a nearby power plant. It is also true that more than half of the electricity we use comes from coal-fired plants.

Much of what we knew about coal may be changing. Clean coal technology (i.e., coal that is used in new and different forms in new and different devices that can greatly reduce air pollution) is available and under development. However, none of these improvements eliminates the problems associated with coal, they only reduce them; and if we are going to greatly increase our reliance on coal for power production, we may be right back where we started with regard to climate change impacts and health hazards caused by coal use.

The Department of Energy and a non-profit consortium of representatives of the coal and power industries are

working on a project called FutureGen. The goal of the FutureGen project is to develop a zero carbon emissions method for burning coal. This is a 10-year, \$1 billion, project that would lay the groundwork for using coal to then produce hydrogen for hydrogen fuel cells. While this sounds very promising, zero emission coal use (through sequestration techniques) is a long way off and may never be accomplished. Coal use should be viewed as one of many elements of our future energy mix, not a wholesale solution.

There are large established industries that are heavily dependent on the coal industry. Most notable are the railroads. Movement of coal accounts for 44% of the total tonnage of goods transported by Class 1 railroads. (There are three classes of railroads, with Class 1 by far the biggest. They operate 70% of the total track miles in the U.S., employ 73% of the labor force, and account for more than 79% of total rail freight revenues.) Certainly, the railroad industry is relishing the anticipated growth in coal use.

Another consideration with the use of coal is the shortage of miners in some areas and the difficult circumstances in which they must work. Although machinery has reduced the number of miners required overall, there were 110,000 coal miners in the U.S. in 2005 and the numbers are increasing. While accidents and deaths in the mines are down tremendously from decades past, the number of deaths more than doubled from 22 in 2005 to 47 in 2006.

Coal use will not be the “cheap” or “easy “solution to our energy needs. Given the existing infrastructure that exists to support it, let alone the thousands of jobs that depend on it, its place in the energy mix of the future is certain. It will be a challenge to produce clean energy with coal; there is still much technology to be developed in this area to make clean coal use a reality. Finally, increased mining of coal cannot be on the backs of poorly protected workers. Much more comprehensive safety systems and maintenance of those systems will need to be developed as the industry undergoes its expected growth in the coming years.

**Something to Think About**

Terrapass provides a method for people to calculate how many pounds of carbon dioxide their everyday behaviors release into the environment, contributing to climate change. Check out [www.terrapass.com](http://www.terrapass.com) to learn about your carbon “footprint”. At the same time, you may choose to purchase a “terrapass.” They offer road, flight, home and dorm terrapasses that are designed to offset the energy you use and the carbon dioxide released. Funds collected for a terrapass are invested in wind energy, biomass and industrial efficiency projects. Terrapass is certified by the Green-e program to ensure that renewable electricity products meet the program's environmental and consumer protection standards.

**A Good Book**

*Lives Per Gallon, The True Cost of Our Oil Addiction*, a new book by Terry Tamminen, is a quick and fascinating read. This book is filled with history of the development of the oil and auto industries, early insights as to the potential dangers posed by the widespread burning of fossil fuels, and notes and references that can take the reader on to dozens of other important articles.

*Energy Shift wants to help you put words into action. Begin your own personal energy shift! If you are already well on your way, share these ideas with others. Sometimes the best way to help someone get started is to give him or her something useful instead of just talking about making a change.*

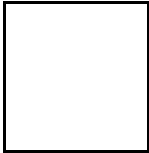
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