

Peak Oil

Contributed by James Howard

'Peak Oil' is a term used to define the maximum point in global oil production. It marks the end of the first half of the age of oil and the start of the second half of the age of oil. It marks the point when roughly half of the oil that will ever be produced, has been produced.

After approximately 1trillion barrels produced over the last 150 years, that point is now, or thereabouts. At current consumption levels, if we could keep up the same levels of production, the final trillion would last just 30 years.

Peak Oil also marks the start of the greatest downsizing in human history. If you ever wanted to get people to start downsizing, getting them to understand Peak Oil is a great first step - downsizing won't be a choice, it'll be a necessity.

Whereas the first half saw a world get used to ever increasing production of oil (a finite source of energy and material for many traded products now considered essential to every day life) the second half will see us producing about 3% less oil globally per year. The type of oil left will be harder to extract and more costly to refine. Demand is increasing worldwide as other countries industrialise and play 'catch up' with the west. The consequence is not just in ever rising oil prices but actual physical shortages, as is being experienced in some parts of the world already such as the Philippines. There is no combination of alternative fuels that will sufficiently make up for the shortfall that will occur. Industrial society and the financial system it created, based on the idea of every increasing amounts of cheap oil, will be shocked to the core, breaking apart the systems and interdependencies that have been built up.

This may sound like revolutionary talk, or the talk of extremists. The reality is stark. For example, our financial system is based on 'fractional reserve banking' - banks loan money on the confidence that there will be growth in the economy to pay back the loan. But the growth of the industrial economy is closed tied to growth of what is essentially concentrated solar energy - oil. Once oil goes into decline, the economy will go with it. There will be increasing poverty and unemployment. We will be left with little option but to downsize. If the prices don't force us, the actual physical shortages will.

WHERE WE ARE NOW

We live in remarkable times. Everything seems okay. No big alarms are going off. We can fly to the other side of the world in 24 hours. We can produce enough food to feed the world, if we wanted to. We can travel cheaply and easily thanks to cars. We have computers, TVs, washing machines and countless other things that make our lives easier and better. It has been achieved because of oil.

There is probably little around you that has not been made from or transported by oil. It is a remarkable substance that goes beyond powering your car - it is involved heavily in agriculture, medicine, packaging, water distribution, national defence and over 500,000 products. When you then consider how many jobs are dependent on oil it becomes clear that oil is the lifeblood of modern society - take it away and the system freezes up, as the UK fuel protests of September 2000 demonstrated.

Most people have never had to think about oil before - there always seems to have been more and more. Now we are beginning to see demand exceed supply as large countries such as China and India increase their consumption to record levels in an attempt to bring western standards of living to their countries. This is happening at a time when global oil extraction is about to peak and then decline. The predictions of 'peak oil' vary but clusters around 2010. The exact date is irrelevant, it is sufficient to know it will happen soon and with it ends the age of cheap oil. The major oil company Chevron has launched a campaign to highlight this (www.willyoujoinus.com)

HOW DO WE KNOW WE ARE APPROACHING PEAK OIL?

A full understanding of how and why global oil production will peak can be found at www.peakoil.net home of the Association for the Study of Peak Oil & Gas, and also www.wolfatthedoor.org.uk. However, the easiest way to understand it is as follows. Oil fields always follow the same pattern - you have to discover oil before you can produce it. If you look at any country, from the point when the maximum is discovered, it generally takes 25 to 40 years for the oil field to reach the peak in production, and then it declines. Whether it is U.S.A or U.K or Egypt or Indonesia or Iran or wherever, the pattern is always the same. The world peaked in discoveries in the 1960s. 40 years on we are approaching the peak in production. If it had not been for the oil crisis of the 1970s we would probably be there now.

PEAK OIL AND THE ENVIRONMENT

Oil decline may seem good for the environment but it is likely that coal and nuclear will be the power sources that are immediately turned to fill the energy void, despite their drawbacks. Furthermore, a reduction of 3% a year in global oil use will not have significant impact on the accumulated CO2 in the atmosphere.

There will be an increase in the use of gas too, but the peak and decline for gas is expected perhaps just 10 years after oil. Renewable energy such as wind, solar, biomass and tidal can provide part of a solution but only so far as energy is concerned and they do not have the versatility of oil for other products. There is much talk of fuel cells and a hydrogen

economy, but the technology to make it widespread and viable is many years from fruition, if ever. No combination of alternative energy will make up for the shortfall. If there was, I'd have found it by now, stopped worrying and wouldn't be writing this article!

MITIGATION

When planning for the future, it is prudent to rely on what there is rather than place hope in what only might be. None of these fuels are as versatile, transportable or versatile as oil. There is simply no cheap and easy replacement for what we have constructed our society around.

It is truly a challenge on the largest scale and we have not even begun to think about it yet. In a March 2005 report for the U.S Department of Energy, Professor Hirsch wrote,

"As peaking is approached, liquid fuel prices and price volatility will increase dramatically, and, without timely mitigation, the economic, social, and political costs will be unprecedented."

The oil crisis of the 1970s threw the world into economic depression, and with it declining living standards. That was only temporary, caused by political factors. The forthcoming decline is a result of inevitable geological realities.

One of the biggest impacts will be on the financial system. In the February Association for the Study of Peak Oil (ASPO) Newsletter, Dr. Colin Campbell described the likely scenario,

"The Second Half of the Oil Age now dawns and will be characterised by the decline of oil, followed by gas, and all that depends upon these prime energy sources. The actual decline of oil will be gradual at less than three percent a year: such that the production of all liquid hydrocarbons in 2020 will have fallen to approximately what it was in 1990. In those terms, it does not appear to be a particularly serious situation.

"But in reality, it is a devastating development because it implies that the oil-based economy is in permanent terminal decline, removing the confidence in perpetual growth on which the Financial System depends. This in turn leads to the conclusion that the World faces another Great Depression, triggered more by the perception of long term decline of the general economy rather than the actual decline of oil supply itself which is gradual not cataclysmic."

The implications of peak oil can seem almost apocalyptic. There will undoubtedly be more wars to secure oil resources, continuing a tradition that is almost as old as the mass use of oil itself. A global economic depression is inevitable, and with it a widespread drop in wealth & living standards caused by the loss of jobs based on oil. A significant crash in the current debt-based financial system is also to be expected and with it severe damage to financial investments such as private pensions can be predicted.

Food will become more expensive as the price of oil to power farm machinery, produce the pesticides, then transport, process, package and store the food increases. Studies show we use as much as 10 calories of fossil fuels to produce 1 food calorie. In situations of increased hardship it would not be hard to expect increases in levels of crime and civil unrest and maybe even infractions on civil liberties and democracy in an attempt to control the situation. In September 2005, 22 people were killed in Yemen during civil unrest caused by rising oil prices.

SOLUTIONS

The solutions to this frightening situation are much the same as the ones for climate change and we must therefore stop waiting for some magic elixir that will allow us to continue in the wasteful way we are. Instead we must use the knowledge we have and begin designing and building a low-carbon society providing the best standard of living for the most people possible. Inevitably, we need to downsize and relocalise. These will be forced upon us and it is wise to prepare for these circumstances in advance.

The effort required for this will require deep and fundamental changes in our attitudes, our expectations and the way we lead our daily lives. It is likely there must be an acceptance amongst the public for these tough changes before government action can be expected, and that in itself may be a task too big to achieve before it is too late. Change must happen soon, for we can be sure that the future we choose to make for ourselves will be far better than any thrust upon us.

This is a topic that has many books and websites dedicated to it. The best two as an introduction are probably Richard Heinberg's "The Party's Over" and "PowerDown". The first looks at causes and consequences, the second looks at what are options to deal with it are.

The depth of the subject of "Peak Oil" and what it entails are wide, as it deals with the near future of industrial civilisation and how we move from such a complex, oil dependent system. This article alone cannot do it justice, and therefore further investigation is encouraged at the following websites.

www.PowerSwitch.org.uk
The home of a UK campaign raising awareness of Peak Oil

www.PeakOil.net
Home for the Association of the Study of Peak Oil & Gas

www.hubbertpeak.com
Excellent resources

www.odac-info.org
The UK Oil Depletion Analysis Centre

www.depletion-scotland.org.uk
A Scottish campaign group

www.drydipstick.com
Peak Oil links

www.lifeaftertheoilcrash.net
A 'Shock and Awe' approach to learning about Peak Oil.

The following books are helpful too:
The Party's Over by Richard Heinberg
Powerdown by Richard Heinberg
The End of Oil by Paul Roberts
Resource Wars by Michael T. Klare
Life After The Oil Crash by Matt Savinar

Viewing:
The End of Suburbia
Peak Oil : Imposed by Nature
(both available at PowerSwitch.Org.Uk)

With hope for a better future,

James Howard
www.PowerSwitch.org.uk