

THE APPROACHING ENERGY CRISIS

September 2004

On the 24 August 2004, Green Party member, Jeanette Fitzsimons was reported to have asked the deputy prime minister, Dr Michael Cullen, in the House:

What does the Minister understand by the term 'peak oil' and when does he expect it to occur?

Replied Dr Cullen:

I have to confess that, for once, the member has floored me; I do not understand what is meant by the term 'peak oil'.

Was the Minister being disingenuous or just plain unknowledgeable on this vital issue? Either way, Dr Cullen's reply was extraordinarily alarming.

New Zealand is a member of the International Energy Agency (IEA), which foresees enough oil to comfortably meet demand to 2030. This, it seems, the Minister of Energy, Pete Hodgson, goes along with. The IEA may well be correct in its assumption (although many international authorities predict otherwise), but what happens as *production* declines and the remaining oil becomes increasingly expensive? Remember that on our time scale 2004 to 2030 is but the blink of an eyelid. If the year 2000 turns out to have been that of 'peak oil', as Princeton Professor Kenneth Deffeyes told the May 2003 Paris Peak Oil Conference it was, [1] worldwide *production* in 2020 will be the same as it was in 1980. But the world's population in 2020 is predicted to be approximately twice its present size and more industrialised than it was in 1980, producing a situation in which demand for oil will have greatly outstripped *production*.

It seems common sense, regardless of whether non-renewable energy sources will decrease more or less rapidly and finally run out in 20, 30, 40 or more years, to adopt the Precautionary Principle and do all that is humanly possible to mitigate the severity of civilisation's crash.

Let's go back a bit and start in 1956 when the late M King Hubbert, "probably the world's most famous and influential geologist", [1] publicly announced the 'peak oil' theory which has it that 40 years after peak *discovery* comes peak *production*. Hubbert noted that exploration in all its forms follows a bell-curve with *production* plotted against time. In the ascending curve exploration and production are easy and cheap, but in the descending curve it becomes progressively more difficult and expensive. [2] At the time, Hubbert's ideas were much disparaged. However, with US oil production peaking in 1970-71, some people began to realise that all was not well..

In 1972, the Club of Rome shocked the world with its study, *Limits to Growth*, which concluded that:

- If the population continued to grow and industrialize as it had been [and as it has continued to do], society would run out of renewable resources by the year 2072, with a massive die-off resulting.
- Even if the supply of resources was somehow doubled, a collapse would occur as a result of pollution. [3]

Then in 1995, Petroconsultants Pty., Ltd., one of the largest and most respected oil industry analysis and consulting firms, released a document called *World Oil Supply 1930-2025*. This report predicted that global oil production would peak around the year 2000 and decline by 25 percent by 2025. [4]

People seemed to take little notice of this situation until four years later when Dick Cheney, then CEO of the giant Texas Oil Company Halliburton, stated:

By some estimates, there will be an average of two percent annual growth in global oil demand over the years ahead, along with, conservatively, a three percent natural decline in production from existing reserves... That means by 2010 we will need on the order of an additional 50 million barrels a day. [5]

This is equivalent to six times the amount of oil produced per day by Saudi Arabia, the world's leading oil producer. [6] A report commissioned by Cheney and released in April 2001 was not sanguine.

The most significant difference between now and a decade ago is the extraordinarily rapid erosion of spare capacities at critical segments of energy chains. Today, shortfalls appear to be endemic. Among the most extraordinary of these losses of spare capacity is in the oil arena. [7]

Prior to this, the NZ Ministry of Commerce issued a report which stated:

In the last hundred years New Zealand's use of energy doubled every 22 years, while our CO2 emissions increased 22 percent from 1990 to 2000, and are projected to increase by 45 percent from 1990 to 2012 if growth in energy continues unchecked. [8]

With the new millennium, interest in the energy situation obviously sharpened. In February 2002, Dr Colin Campbell, former exploration geologist for Texaco and chief geologist for Equador, reported:

Peak oil is a turning point for mankind. The economic prosperity of the 20th Century was driven by cheap, oil-based energy. Everyone had the equivalent of several unpaid and unfed slaves to do his work for him, but now these slaves are getting old and won't work much longer. We have an urgent need to find how to live without them. [9]

Campbell followed this up in 2003 with his book *The Essence of Oil & Gas Depletion*:

Oil and gas are finite fossil fuels from the geological past and are inevitably subject to depletion. Eventually we must run out, but what matters more is the inevitable peak of production when growth gives way to decline. The wider implications of this historic discontinuity are colossal. [10]

In June 2003, Matthew Simmons, CEO of the world's largest Energy Investment Bank, Simmons & Company International, and George W Bush's energy advisor, acknowledged that: "The situation is desperate. This is the world's biggest serious question." [11] Simmons went on, in an August interview, when asked if it was time for Peak Oil to become part of the public policy debate:

It is past time. As I have said, the experts and politicians have no Plan B to fall back on. If energy peaks, particularly while 5 of the world's 6.5 billion people have little or no use of modern energy, it will be a tremendous jolt to our economic well-being and to our health – greater than anyone could ever imagine [12]

A month later, in another interview, Simmons expounded further:

We are now in a box we should never have gotten into and it has very serious implications. We also see the inevitable issues that follow a major blackout: no water, no sewage, no gasoline. [Simmons was referring to the August 2003 power grid shut down over a third of the US.] The gasoline issue is very important. Our gasoline stocks are at near all time

lows. With the blackout, more than seven hundred thousand barrels per day of refinery capacity were shut down. People were told to boil their water. (But)... they go to their electric stove which isn't working. What then? ...[13]

Asked for a solution, Simmons advised:

The solution is to pray. Pray for mild weather... Pray for no hurricanes and (no reduction of) natural gas supplies. Under the best of circumstances, if all prayers are answered there will be no crisis for maybe two years. After that it's a certainty. [14]

In September 2003, came a report that Chevron-Texaco planned to dispose of 550 filling stations in the United States; 900 in Asia and Africa; retailing and refining operations in Europe, South America, Australia and the Middle East and the exploration and production holdings in North America, the North Sea and Papua. Such planned actions should deliver a broad message of a decline strategy in the face of pending peak and decline of world oil production. [15]

George W Bush's Secretary of Energy, Spencer Abraham, has echoed Simmons' sentiments:

America faces a major energy supply crisis over the next two decades. The failure to meet this challenge will threaten our nation's economic prosperity, compromise our national security, and will literally alter the way we lead our lives. [16]

It is extremely difficult to establish clear parameters for the true sums for oil production and reserves, for there are many figures available. But one thing stands out – much false information has been broadcast. What then are we – the public – to believe when *CNN International* reported in October 2003 that a research team from Sweden's University of Uppsala had discovered that world-wide oil reserved were as much as 80 percent less than previously thought? [17] Royal/Shell Group slashed its 'proven' reserves 20 percent in early 2004. [18] A month later energy company El Paso Corporation cut its proven natural gas reserves estimate by 41 percent. [19]

The energy industry has quietly acknowledged the seriousness of the situation. For example, Exxon-Mobile recently posted an article on its homepage in which company president Jon Thompson stated:

By 2015, we will need to find, develop and produce a volume of new oil and gas that is equal to eight out of every 10 barrels being produced today. In addition, the cost associated with providing this additional oil and gas is expected to be considerably more than what the industry is now spending.

Equally daunting is the fact that many of the most promising prospects are far from major markets – some in regions that lack even basic infrastructure. Others are in extreme climates, such as the Arctic, that present extraordinary technical challenges. [20]

Early this year, former UK environmental minister, Michael Meacher, stated: "It's hard to envisage the effects of a radically reduced oil supply on a modern economy or society. The implications are mind-blowing." [21] Shortly afterwards *The Toronto Star* reported him as saying that we were facing "the sharpest and perhaps the most violent dislocation (of society) in recent history." [22]

With regard to food and water supplies, which are irrevocably dependent on energy supplies, the future is not encouraging. World grain production has dropped every year since 1996-1997. [23] World wheat production has dropped every year since 1997-1998, while recent food price

increases in China could signal a coming world food crisis. [24] In the US last year, a quarter of the fertilizer factories shut down permanently. [25]

The thought of oil depletion and its consequences hasn't yet entered the consciousness of the general public. Society, being addicted to oil, is unprepared for shocks. But as Aldous Huxley has warned us: "Facts do not cease to be facts simply because they are ignored." [26]

- US oil *discovery* peaked around 1930.
- US oil *production* peaked in 1970-71.
- UK oil *production* peaked in 1999.
- Australian oil *production* peaked in 2000.
- Global oil *discovery* peaked in the mid-1960s.
- Global oil *production* is predicted to peak around 2005-2007.
- US natural gas *production* peaked about 1970.
- Global natural gas *production* is predicted to peak shortly after oil. (By the year 2000, US domestic *production* was at 1/3 of its peak level.) [27]
- Against a still increasing population, increasing industrialisation (especially in China) and thus increasing energy demands, we are currently burning four barrels of oil for every one barrel discovered. [28]

Few people seem to appreciate the gravity of the situation, where almost every current human endeavour – especially in the growth-orientated, materialistic world – from transportation, manufacturing, electricity, pesticides, fertilisers, plastics and particularly food and water production, is inextricably dependent on oil, coal and natural gas supplies somewhere along the line. There are no combinations of energy sources within sight that will support a small fraction of the life style that the Western world in particular has grown accustomed to.

In an interview with ABC News, Dr David Goodstein, Professor of Physics and Vice Provost of Cal Tech University, (his recent book is *Out of Gas: The End of Oil*), had this to say about Peak Oil:

Best case? The worldwide disruptions that follow the peak serve as a global wake-up call. A methane-based economy is successful in bridging the gap temporarily while nuclear power plants are built and the infrastructure for other alternative fuels is put in place. The world watches anxiously as each new Hubbert's peak estimate for uranium and oil shale makes front-page news.

Worst case? After the peak,, all efforts to produce, distribute, and consume alternative fuels fast enough to fill the gap between falling supplies and rising demand fail. Runaway inflation and worldwide depression leave many billions of people with no alternative but to burn coal in vast quantities for warmth, cooking, and primitive industry. The change in the greenhouse effect that results eventually tips Earth's climate into a new state hostile to life. End of story. [29]

Every viable alternative form of energy supply, especially wind and solar power generation, should be rapidly forced to move onto fast-track by all concerned, "to reduce oil dependence," as physicist Alfred Cavallo says, and not wait "for Mother Nature to slap them in the face." [30]

Perhaps the Saudi Arabians will be able to cope better than the Western world, for they have a saying: "My father rode a camel, I drive a car, my son flies a jet aircraft – his son will ride a camel."

