



Speech by

Andrew McNamara

MEMBER FOR HERVEY BAY

Hansard Tuesday, 22 February 2005

PETROLEUM AND OTHER LEGISLATION AMENDMENT BILL (NO. 2)

Mr McNAMARA (Hervey Bay—ALP) (8.39 pm): I rise to support the Petroleum and Other Legislation Amendment Bill. This bill is necessary to ensure consistency and efficiency in the administration of the petroleum and pipeline industries in Queensland, including implementing our vital coal seam gas regime. I say 'vital' because we will soon be faced with the effects of the rundown of the world's oil reserves after the advent of peak oil. Peak oil represents the most serious and immediate challenge to our prosperity and security. It will impact on our lives more certainly than terrorism, global warming, nuclear war or bird flu. While it may not be a term with which members are familiar now, I predict it will come to dominate debate in this place over the next 10 years.

The concept of peak oil was identified in 1956 by the late US oil industry and government geologist M King Hubbert. Dr Hubbert suggested that the rise and fall of oil production in a nation, or indeed the world, would follow a pattern for individual wells; that is, rising sharply from when oil under pressure in the ground is first spiked, increasing as more wells are sunk, plateauing when half the oil has been extracted and tapering away as the remaining recoverable oil is pumped out. This is now referred to as the Hubbert curve. From the halfway peak, all oil flows decrease as the pressure in the oil basin declines. The cost of recovering the oil rises exponentially from this point as it has to be extracted with greater degrees of technical difficulty, such as flooding the reservoir with water to float residual oil into a recoverable position.

Dr Hubbert worked for the United States Geological Survey as a senior research geophysicist for 12 years. He was employed as director of Shell's research laboratory in Houston for 20 years. He taught at Stanford University, the Massachusetts Institute of Technology and the Johns Hopkins University and made a number of outstanding contributions to the field of geophysics. Regrettably, his modelling of peak oil was ignored by government and rejected by industry, but he has been proven right.

As the US energy administration now concedes, oil production in the USA peaked in 1971, as he predicted it would, and has been in steady decline since. Production for all nations outside the Middle East peaked in 1997. The scientific community is currently involved in a vigorous debate about the anticipated date of world peak oil. I quote from an article published in the *Scientific American* of March 1998 by Dr Colin Campbell and Jean Laherrere. It states—

Using several different techniques to estimate the reserves of conventional oil and the amounts still left to be discovered, we conclude that the decline will begin before 2010.

I will say more about the date of world peak oil in just a moment, but one fact is indisputable: when the Middle East peaks between 2006 and 2020 the world will have passed peak oil, and oil prices will commence to climb irreversibly until all recoverable oil reserves are exhausted within 50 years.

The advent of world peak oil will change our way of life forever. The concept of peak oil is now universally accepted by geologists and mining engineers. It has recently gained acceptance by highly-respected oil industry experts such as banker Matt Simmons of Simmons and Co. International and the vastly experienced Washington based energy consulting firm PFC Energy. Matt Simmons has 30 years experience in one of the world's largest energy investment banking groups and served on President George W Bush's Energy Advisory Committee between 2001 and 2004. I table an article by Mr Simmons

published in *Petroleum News* in August 2004 in which he concluded that peak oil 'could be the biggest energy issue the world has ever faced'. I also table a copy of an article from the *Business Magazine* of 7 November 2004 that contains confirmation of peak oil for the first time by a senior oil industry executive, Francis Harper of BP. He expects global oil production to peak between 2010 and 2020.

Picking the exact date of the peak is difficult because one has to rely on data from oil companies and OPEC members about their oil reserves. Members may be aware that the Royal Dutch/Shell Group on 5 February 2005 cut its 2002 published estimate of its total oil and gas holdings by one-third. It reduced its 2003 estimate of oil reserves by 1.4 billion barrels, or 9.8 per cent, and admitted that two-thirds of its listed prospective wells in 2004 were in fact dry holes. Shell has been fined \$US151.5 million for misleading stock markets. The US justice department is undertaking a criminal investigation. Given that company value is directly related to oil reserves, it is not surprising that Shell has lost its top-tier credit rating. Oil companies have a vested interest in overstating reserves, and Australian company regulators should be especially vigilant in this regard.

What does it mean if peak oil is not 2020 but 2006 because oil companies and OPEC members have overstated reserves? In the late 1980s, six of the 11 OPEC members revised their reserve oil figures upwards by amounts ranging from 42 per cent to 197 per cent. If those estimates were merely an effort to manipulate OPEC production quota rules, it means that we have a serious problem right now.

There are many things the Beattie government is doing that will help soften the impact of peak oil whenever it occurs. We are supporting research and development in coal, hydrogen, solar, wind and biomass power. This is all important and must be continued and indeed accelerated. I note that the state development minister, Tony McGrady, recently announced a \$250,000 grant to help the CSR mill at Sarina become Australia's chief ethanol producer. Ergon Energy is investing in wind farm technology, an energy source that has the best energy return on energy invested ratio of all the alternative energy sources. This is an excellent initiative.

But make no mistake: there is no silver bullet to defeat the most serious impacts of peak oil. We will not find sufficient new oilfields to meet current demand, let alone to feed the soaring demand of emerging economies like China. New oil discovery across the world peaked in 1960 and we now find one barrel of oil for every four we consume. The six giant Saudi oilfields that produce the entire eight million barrels a day of Saudi production are all aged between 40 and 65 years. Nothing approaching the giant Ghawar field's size has been found in the last 50 years.

We have coal for electric power for 200 years, but coal cannot effectively replace oil. While it is possible to make synthetic fuels from coal and while hydrogen extracted from coal can power a fuel cell, these processes use more energy than they produce. In other words, they are net energy losers. This is the unavoidable impact of the second law of thermodynamics. Nuclear power suffers from the same net energy loss problem, as well as the known radiation and waste storage risks.

The only effective replacement energy source for oil is liquefied natural gas, but it is subject to the same Hubbert curve as oil and may even be disappearing at a faster rate. All other energy sources combined cannot replace the volume of energy we derive from oil. For some alternative energy sources, such as ethanol, far more energy is expended in planting, fertilising, growing, harvesting and processing than its end product renders. No other energy source can fly planes or drive heavy trucks and machinery. Further, most of the world's fertiliser is now made from natural gas, and most of the world's pesticide is made from oil. As fuel prices double and then double again in the years after the peak, we will be faced with some very hard choices in the fields of agriculture, food distribution and transport generally.

I congratulate the government on its recent decision to preserve agricultural land in the south-east corner. The challenges we face after peak oil will require localised food production and industry in a way not seen for 100 years. Local rail lines and fishing fleets will be vital to regional communities. Self-contained communities living close to work, farms, services and schools will not be merely desirable; they will be essential.

There is much more to say on this topic. I note that it has now found its way into the mainstream media via a front-page story in the *Wall Street Journal* of 21 September 2004 and an editorial in the *Washington Times* of 2 November 2004. I welcome that public discussion and suggest that this topic should be considered in detail in Australia and in this place. For members who are interested in a very thorough treatment of this issue I recommend Richard Heinberg's detailed 2003 book *The Party's Over*.

Let me conclude with this simple statement of fact. Peak oil is coming—soon—and no alternative energy source available to us today or in the foreseeable future is going to make up the total energy shortfall. The beginning of the end of the oil age is upon us, and it is time to respond fully to that challenge. The petroleum bill before the House is a necessary step in that process. I congratulate the minister on this reform as well as on last year's Petroleum and Gas (Production and Safety) Act and the Petroleum and Other Legislation Bill that collectively regulate and encourage the exploration and development of petroleum and gas resources in Queensland. I commend the bill to the House.