



The Sustainable Energy Forum Inc.

June 2005

“Peak Oil” – An Urgent Issue for New Zealand!

Introduction

Human activity in New Zealand is heavily reliant on abundant and cheap energy, much of which we get from oil. Yet oil is a finite resource, and one that the world is rapidly using up.

At present, world conventional light crude oil production is barely keeping up with rising demand. At some point, conventional light crude oil production will peak, and then decline - a phenomenon commonly known as “Peak Oil”. This will lead to a sharp, sustained rise in world oil prices, at which point the world will have entered the post-cheap-oil age. There may also be physical shortages of oil. The use of smaller, more remote, harder to extract, heavier and dirtier fossil fuel resources to address that shortage would have financial and environmental downsides.

Alternatives to fossil fuels for transport fuel are theoretically possible, and in some cases (e.g. biofuels) are already used on a small scale, but none are anywhere near ready to replace the world's massive dependence on conventional oil. No single substitute in isolation will replace the cheap energy we currently get from oil and gas.

Because the implications of Peak Oil are so serious for New Zealand, SEF recommends that the Government, and individuals, start planning for “the Peak Oil crisis” now.

Why Peak Oil is an Urgent Priority

Until recently, most official estimates were that Peak Oil would not occur for some decades. In recent years, a number of reputable bodies have predicted that Peak Oil may occur much earlier than previously expected. The International Energy Agency¹ predicts that Peak Oil will occur some time between 2013 and 2037. The Association for the Study of Peak Oil (ASPO)², comprising experienced petroleum geologists, is currently predicting that the peak will occur in 2007 [see graphs on Page 4]. Recent events, such as the sharp increase in world demand for oil, make nearer dates more likely.

But whatever the date of the peak, action is needed now. If the peak is imminent, then we need urgent action to mitigate the worst of its effects. If the peak is still a decade away, then there is much that can be done to prepare for it, provided we do not delay.

¹ IEA web site: <http://www.iea.org>

² ASPO web site: <http://www.peakoil.net>. The graphs and charts on Page 4 are taken from ASPO's February 2005 Newsletter, cited on 14/2/05 from <http://www.peakoil.net/Newsletter/NL50/newsletter50.doc>, p. 2

Implications for New Zealand

In 2003, oil made up 48% of our national energy consumption. Whenever the oil production peak does occur - and the date of this can only be finally confirmed after the event - the effects on an unprepared economy and society will be severe. The most obvious sector that will be affected is transport, but almost every aspect of our economy and society has developed on the back of cheap oil and cheap plastic:

- Tourism is dependent upon cheap aviation fuel.
- International trade depends upon cheap aviation and shipping.
- Manufacturing and electricity generation depend upon imported components.
- Crucially, much of our current agricultural production depends on machinery, pesticides, and the application of fertiliser, all of which are dependent on oil - as is the distribution of the food our farms produce.
- Our banking and financial systems depends on the stability of all these sectors.
- Our cities, towns, and transport systems have all been designed around cheap oil and private transport, none more so than Auckland. Many things which we currently take for granted, such as driving to the supermarket to buy food, or driving the children to and from school, will become much more problematic in the post-cheap-oil age.

What the Government Should Do

SEF recommends that Government implement the following policies to help New Zealand meet the Peak Oil crisis.

Planning measures

1. Establish a high-level task force, to work in conjunction with civil society groups, business interests and other stakeholders, to assess the effects of the coming peak in world oil production. Its terms of reference should ensure it reviews all aspects of New Zealand economic and social life, including but not limited to transport, agriculture, international and domestic trade, the financial system, tourism, foreign policy, and the environment. This task force should be set up as soon as possible, work full-time, hold hearings around the country, and report back by the third quarter of 2006. It should be mandated to make institutional and policy change recommendations for Government and community implementation.
2. Direct Treasury and the Ministry of Economic Development to review their methods for forecasting oil prices in the short and medium term, submit these methods to peer review, and model a range of oil price and supply scenarios to provide advice to the Government on oil price trend risks.
3. Develop contingency plans to respond to severe or prolonged restrictions of oil supply, beyond the level that could be met by use of the 90-day reserve supply mandated by the International Energy Agency. These plans should include demand reduction measures.

Mitigation measures

4. Identify and implement measures that will, in the medium-term, reduce New Zealand's economic and social dependence on oil, and on products derived from oil. Investigate increasing New Zealand's on-shore stocks of products derived from oil for which substitutes cannot readily be found.
5. Investigate the full range of renewable energy sources and strategies to reduce the demand for transport fuels, and implement the most appropriate of these, so that New Zealand becomes less dependent on fossil fuels for transport.
6. Implement changes to the road user charges, vehicle licensing and importing, and fuel tax regimes to reward efficient vehicular selection and fuel use and to penalise inefficient use. This investigation should include ways of mitigating the effects of tax changes on low-income road users, who are least able to make changes.
7. Re-evaluate all roading projects, both proposed and under development, in the light of the coming peak in world oil production and consequent likely shortage of transport fuels. Introduce demand side management measures, and improve and expand rail and other public transport networks.

International action

8. Join, and if necessary initiate, international efforts to manage the transition to the post-cheap-oil era peacefully. SEF is concerned that a new era of resource wars could become a reality.
9. Integrate New Zealand's response to peak oil with its response to human-induced climate change, and in particular New Zealand's commitments under the Kyoto Protocol and any successor (or complementary) international agreements.

What You Can Do

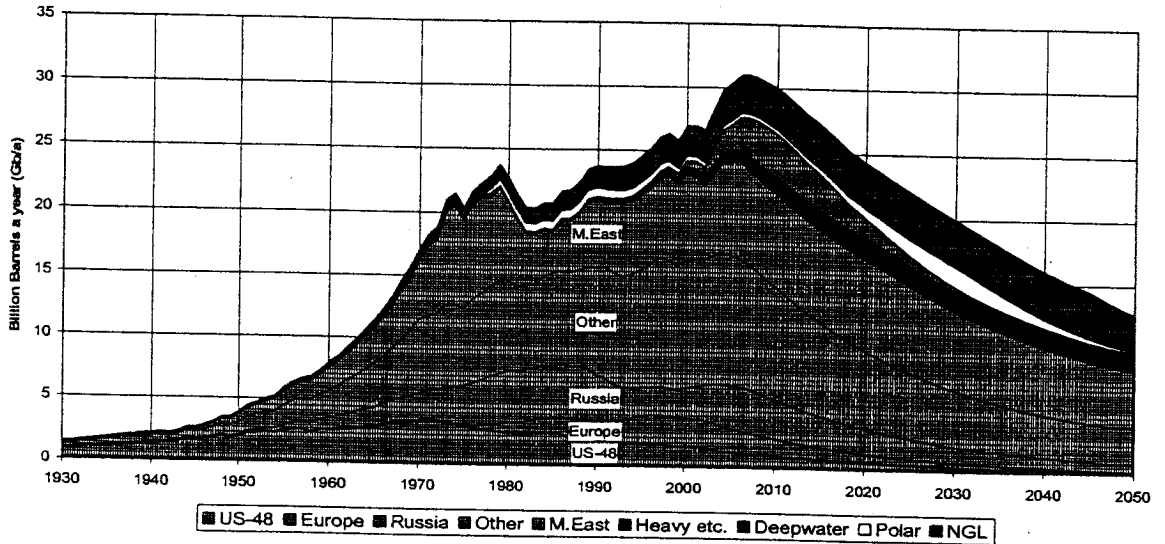
- Research the situation yourself.
- Think about lifestyle changes you can make to help yourself, and the nation, prepare for life without cheap oil.
- Discuss Peak Oil with your neighbours, friends, workmates, and local organisations.
- Find out whether your local council and local MP are preparing for Peak Oil. If they aren't, educate them about the issue and make proposals for change.

About the Sustainable Energy Forum

The objective of SEF is to "facilitate the use of energy for economic, environmental and social sustainability". SEF is a group of individuals and companies interested in promoting information and supporting action which will help move New Zealand toward a sustainable energy future. SEF has a membership around 150 ranging from staff in major energy companies to students and retired people. Many members are active in small-scale sustainable energy supply and energy efficiency businesses. See <http://www.sef.org.nz> for further information and membership.

The General Depletion Picture

OIL AND GAS LIQUIDS 2004 Scenario



ESTIMATED PRODUCTION TO 2100							End 2004		
Amount		Gb	Annual Rate - Regular Oil				Gb	Peak	
Regular Oil			Mb/d	2005	2010	2020	2050	Total	Date
Past	Future	Total	US-48	3.4	2.7	1.7	0.4	200	1972
Known Fields	New		Europe	5.2	3.6	1.8	0.3	75	2000
945	760	145	Russia	9.1	8	5.4	1.5	220	1987
	905		ME Gulf	20	20	20	12	680	1974
All Liquids			Other	28	25	17	8	675	2004
1040	1360	2400	World	66	59	46	22	1850	2006
2004 Base Scenario			Annual Rate - Other						
M.East producing at capacity (anomalous reporting corrected)			Heavy etc.	2.4	4	5	4	160	2021
Regular Oil excludes oil from coal, shale, bitumen, heavy, deepwater, polar & gasfield NGL			Deepwater	4.8	7	6	0	70	2014
			Polar	0.9	1	2	0	52	2030
			Gas Liquid	8.0	9	10	8	275	2027
			Rounding		0	2		-7	
Revised	26/01/2005		ALL	82	80	70	35	2400	2007

