



# Environmental Studies Program

## Issues Update: PEAK OIL

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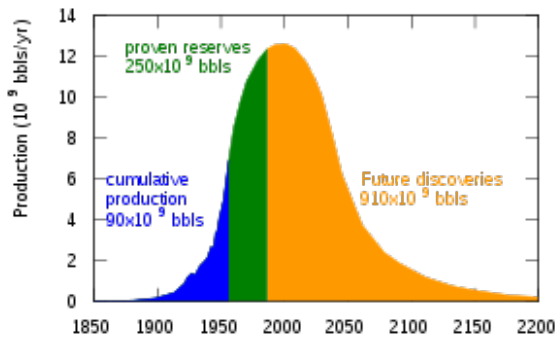
### Keywords

Production, Hubbert Curve, Hirsch Report

### Overview

Peak oil refers to a point of maximum production. The combined production rate of an oil field over time usually grows exponentially, until it peaks and then declines, until the supply is depleted. This trend follows the Hubbert curve, which has been shown to be applicable to the sum of a nation's domestic production rate, and can be similarly applied to the global production of petroleum production. (Hubbert Curve)

In 1974, Hubbert predicted that oil production would peak in 1995, but oil production actually dropped in



1980's and rebounded in 1995 to double the rate initially predicted. This shows that peak oil cannot be predicted accurately until it has already happened. Many projections exist for 2010, and 2030 as the next peak in production, but no one knows for sure. The fact is that when oil production peaks the time it takes to run out will be much shorter than the time we have to come up with remediation efforts.

The US Department of Energy published the Hirsch report in 2005 which states that 20 years is required to transition without substantial impacts, but if we cannot know when this peak will happen how can we respond effectively?

### Technology Responses

New technologies such as satellite imaging which shows variations in gravitational force allow oil companies to search for new oil without drilling.

Other than new finds, which are diminishing, it is in the best interest of Energy companies to invest in new cleaner, sustainable energy alternatives.

### WHAT'S NEW...

- Focus on new technologies

- Biofuels



- Plug-in Hybrids



- Electric Cars



- Hydrogen fuel cells



## **CASE STUDY: New Zealand's Response to Peak Oil**

### **Introduction**

New Zealand's Response to Peak Oil; This document outlines the complexities of peak oil and the potential preliminary steps New Zealand can take to reduce the impact of this event on its country.

### **Approach**

- Developing an integrated national strategy to model the effects of Peak Oil on New Zealand under various conditions, and develop the appropriate strategies to prepare for and respond to a range of Peak Oil scenarios.
- Developing policies to integrate the present range of vehicle use charging measures, and introduce new measures, to create a consistent, effective taxation and charging regime which rewards low fossil fuel use and low emissions, and penalizes high fossil fuel use and high emissions, in the New Zealand vehicle fleet.
- Commence research programs that investigate the potential interactions between the effects of Peak Oil and the effects of climate change.
- Create and implement a national strategy to integrate all modes of transport into a system in which fossil energy use is minimized, and lowers over time.

### **Results**

This document makes three conclusions about what it must do in order to reduce the country's dependence on petroleum oil. These are using less private transportation, using transport energy more efficiently, and using other forms of energy for transport.

#### **By the end of 2006:**

- Make fuel use meters compulsory on all new cars.
- Introduce tamper-proofing of diesel injector pumps.
- Introduce a moratorium on all new roading projects except those that can be demonstrated to produce energy efficiency, environmental or public health gains that outweigh the project's true cost.
- Commence a program of major investment in urban public transport.
- Remove policy and technical obstacles to the increased use of biofuels in New Zealand vehicles, and ensure that the growth and production of biofuels is integrated into New Zealand's wood processing and land use strategies, and that biofuels become available in sufficient quantities, and with sufficiently wide distribution, to meet an increasing demand.
- Commence research programs that investigate the potential interactions between the effects of Peak Oil and the effects of climate change

#### **By 2008**

- Create and implement a national strategy for energy-efficient movement of freight.
- Create and implement a national strategy to integrate all modes of transport into a system in which fossil energy use is minimized, and lowers over time.
- Integrate the planning of the transport system with that of the electricity system, so that both move towards sustainability.
- Continue and extend the public transport investment program where net energy efficiency benefits can be demonstrated.

### **Outstanding/Unresolved Issues**

New Zealand Energy consumption is currently supported (98%) by oil from fossil fuels. This switch will have many hurdles to get over if the right steps are not taken. This paper outlines some and sets goals for their projections, but only time will tell. Nothing is certain when it comes to shifting energy use, but all we can do is attempt to come up with new models which support new forms of economic growth.

### **Lessons Learned**

There are many ways to combat the looming effects of peak oil. All it takes is some good policy and peoples' willingness to change.

### **Resources**

- [http://www.sef.org.nz/papers/peak\\_oil\\_land\\_transport.pdf](http://www.sef.org.nz/papers/peak_oil_land_transport.pdf)
- <http://www.hubbertypeak.com/Hubbert/>
- <http://www.hilltoplancers.org/stories/hirsch0502.pdf>