PEAK OIL

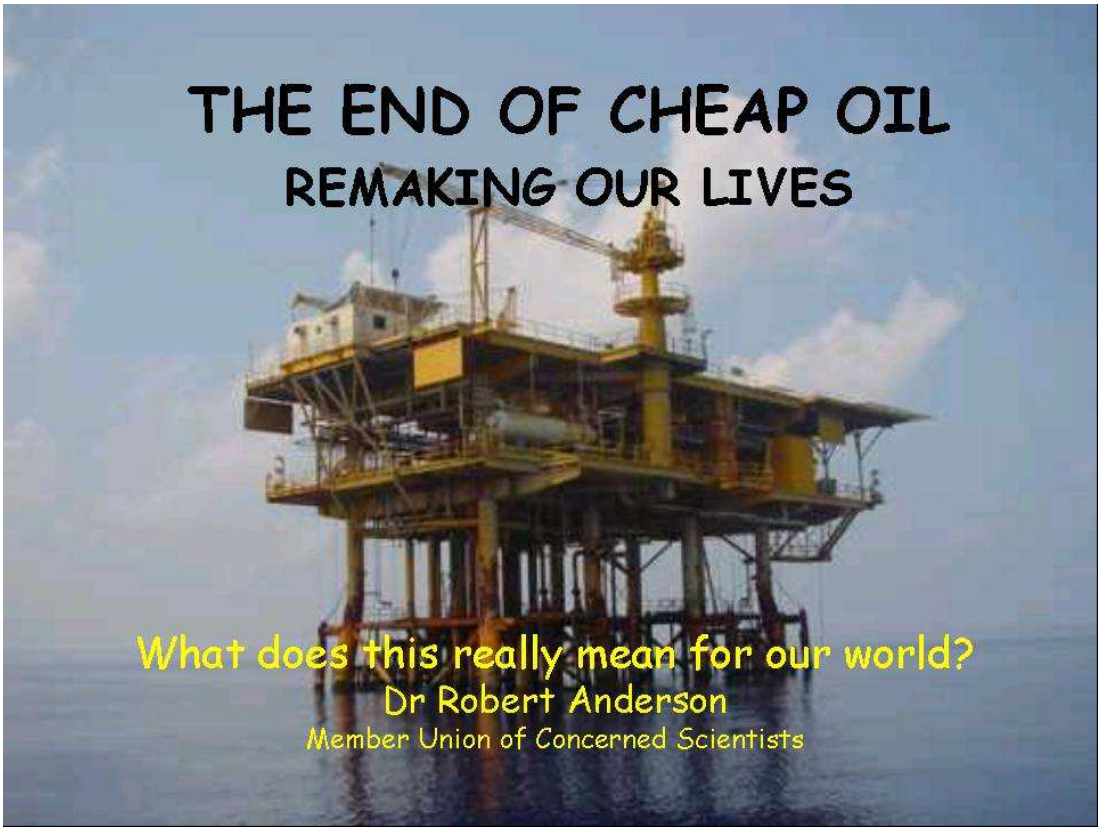
The end of cheap oil – remaking our lives

A public lecture given by Robert Anderson
(Length: 41 pages and 67 slides)

The “Peak Oil” lecture was first presented in New Zealand in 2006

Sadly, Robert died on 5 December 2008

Slide 1 - Introduction

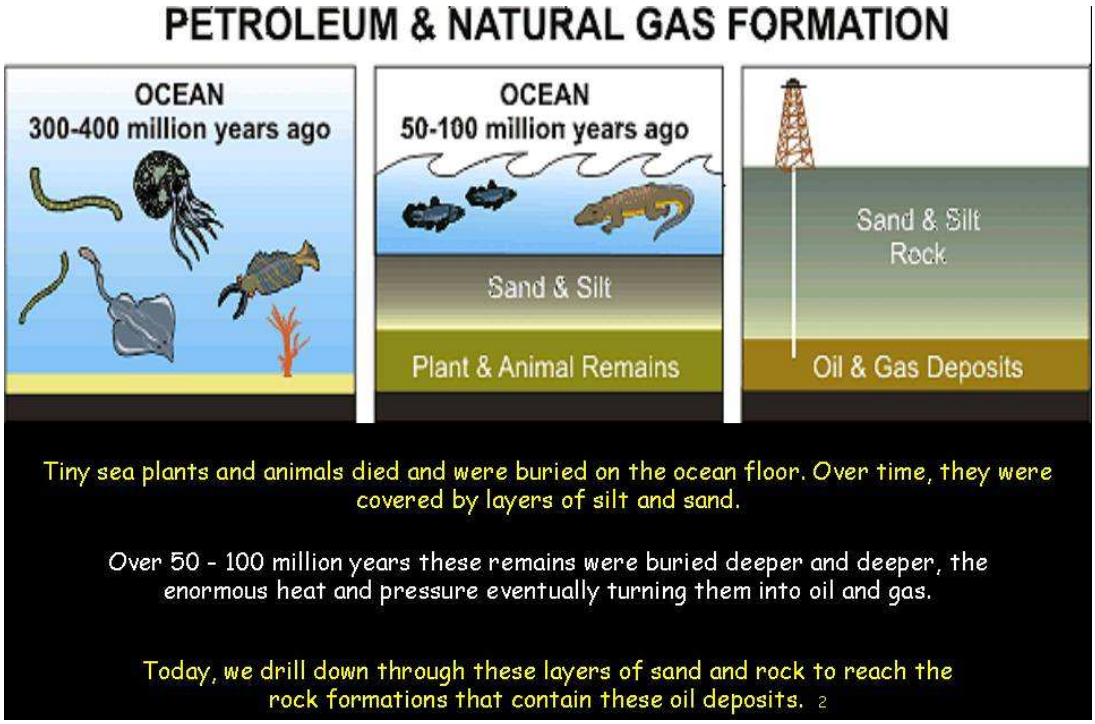


I want to talk with you tonight about a subject which will have a very dramatic effect on all our lives. Climate Change and Peak Oil – both of these are inextricably linked. This talks concerns issues that need addressing urgently and there is a definite reluctance at government level to do so.

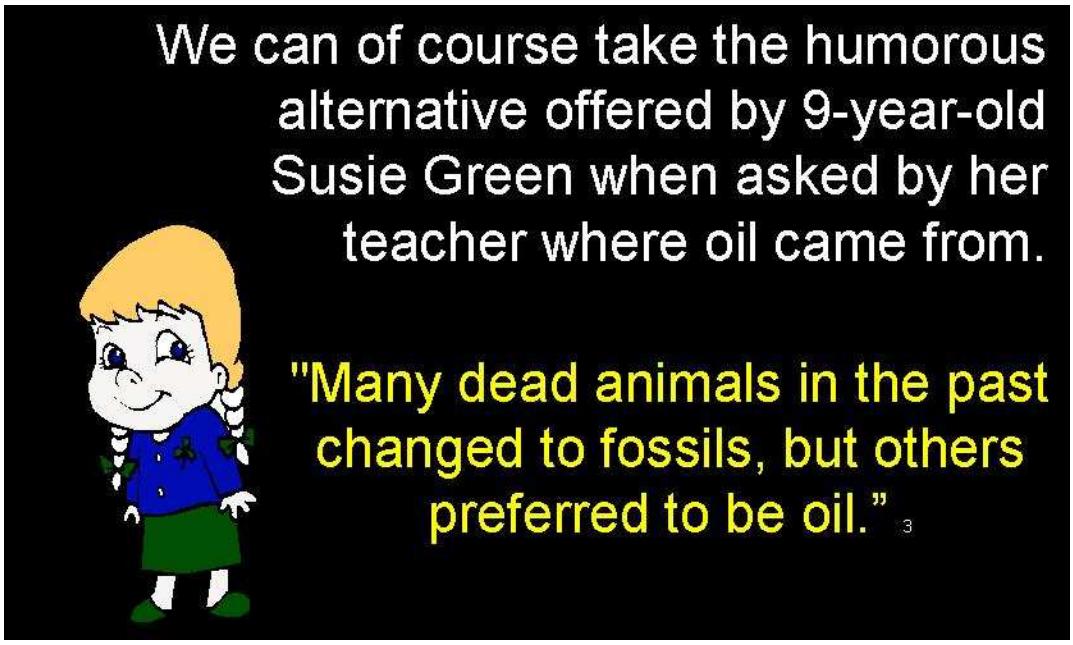
What will we do when oil runs out?

Let us recap and remind ourselves about this non-renewable resource.

Slide 2 – Where does oil come from?



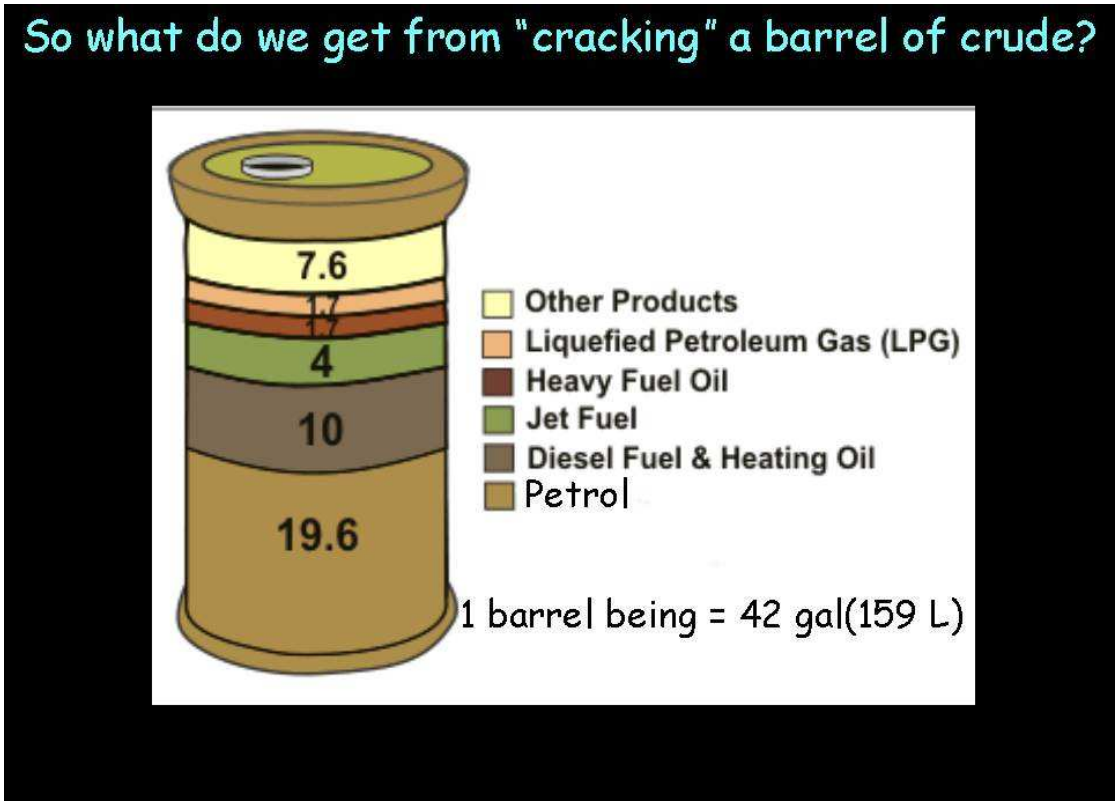
Slide 3 – An alternative view point



Whatever explanation we accept, this valuable resource *is* running out.

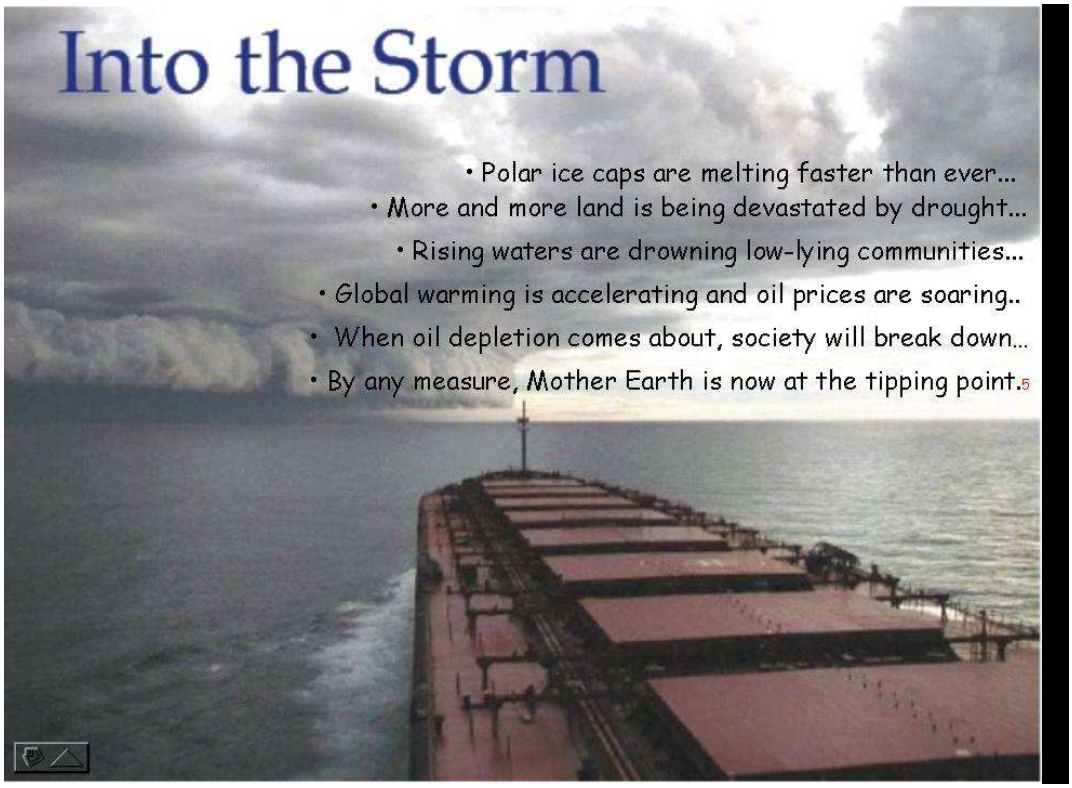
The media constantly remind us of the increased price per barrel, etc. So what is a barrel?

Slide 4 – The barrel



Like popcorn, we get slightly more when oil is *cracked*.

Slide 5 – Sailing into the storm



New Zealand was not called the "half-gallon, quarter-acre, pavlova-paradise" for nothing. When I arrived almost 40 years ago I felt I had reached a paradise. And we have had it good in comparison to many other countries. Unfortunately, things are about to change.

We can no longer afford to just sit and continue to enjoy the status quo. And, apart from the Green Party and a few others, we are not doing anything to allow for a soft landing.

Slide 6 – What will the storm bring?

Let me show you the average New Zealander.

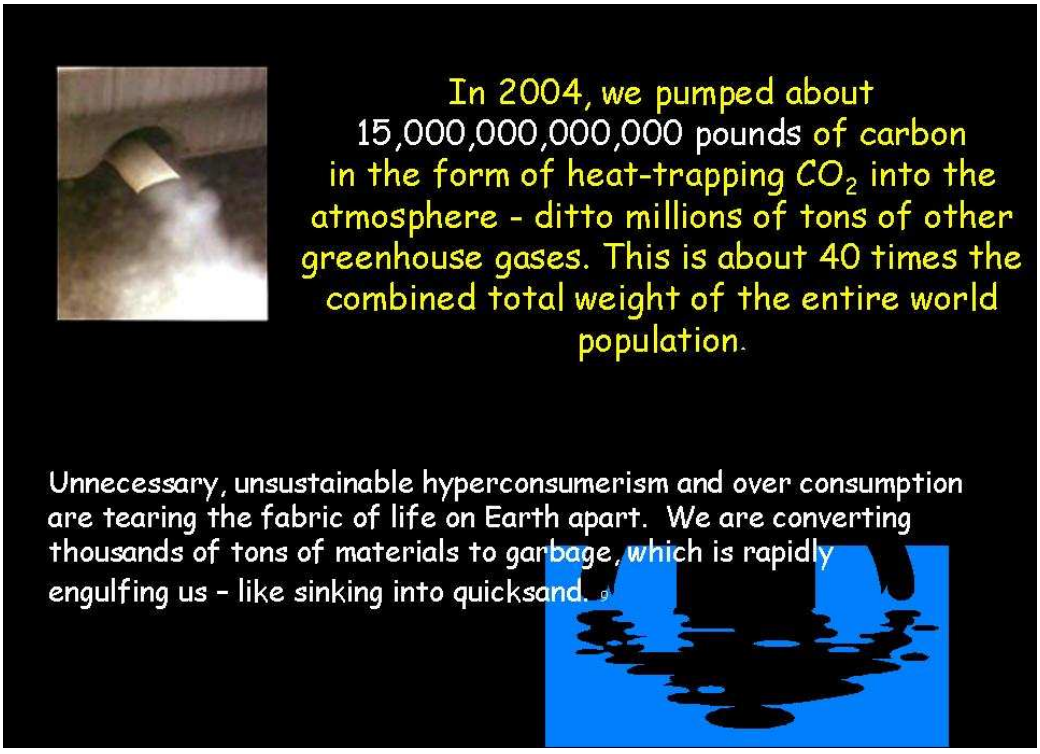
Slide 7

Like the frog, we sit in an ever growing critical situation. The definition of critical is a series of events that, if neglected, becomes terminal. We need to get out of the pot and start rethinking our life styles. We are no only heating the planet, but ourselves as well. Let's take a look at the situation here.

Slide 8 – Hea

So what are we doing wrong?

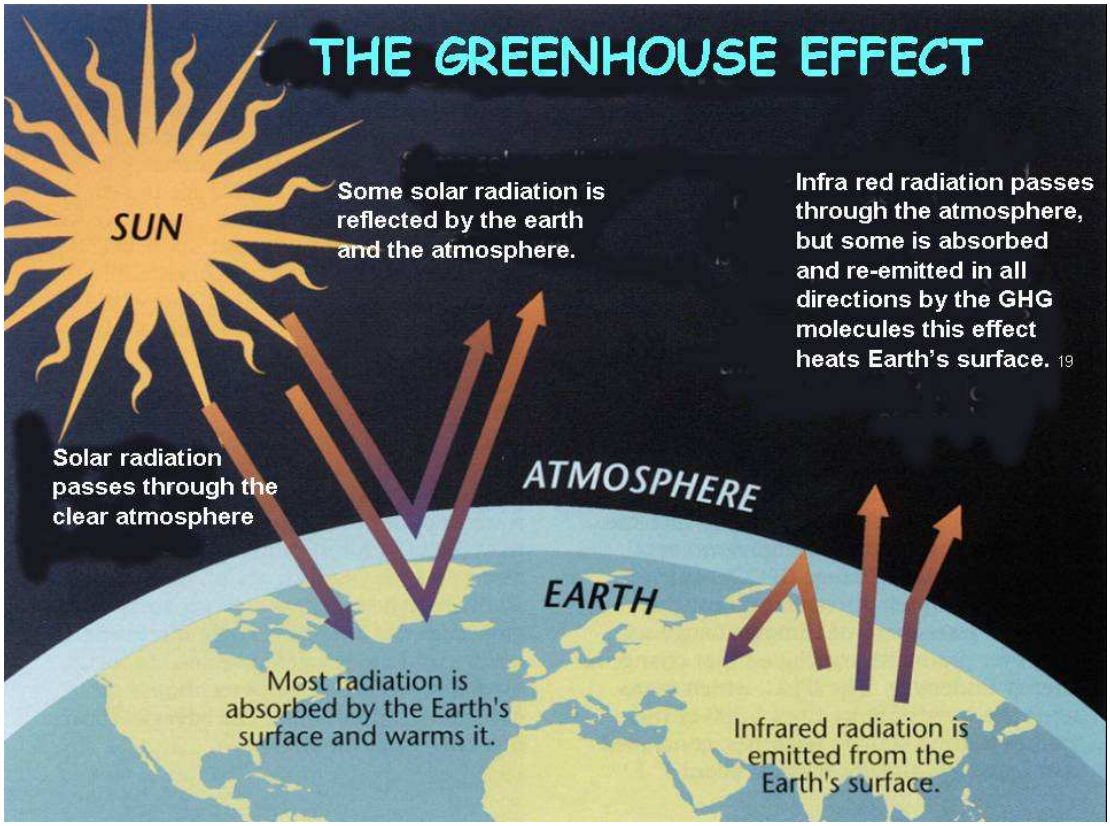
Slide 9 – CO_2 pumped out



There is now evidence aplenty to support this argument. So how did we get to this point without the media even questioning the economic and political system that has now, according to Dr Lovelock, pushed us over the edge of the abyss? He is amply backed up by thousands of top scientists worldwide.

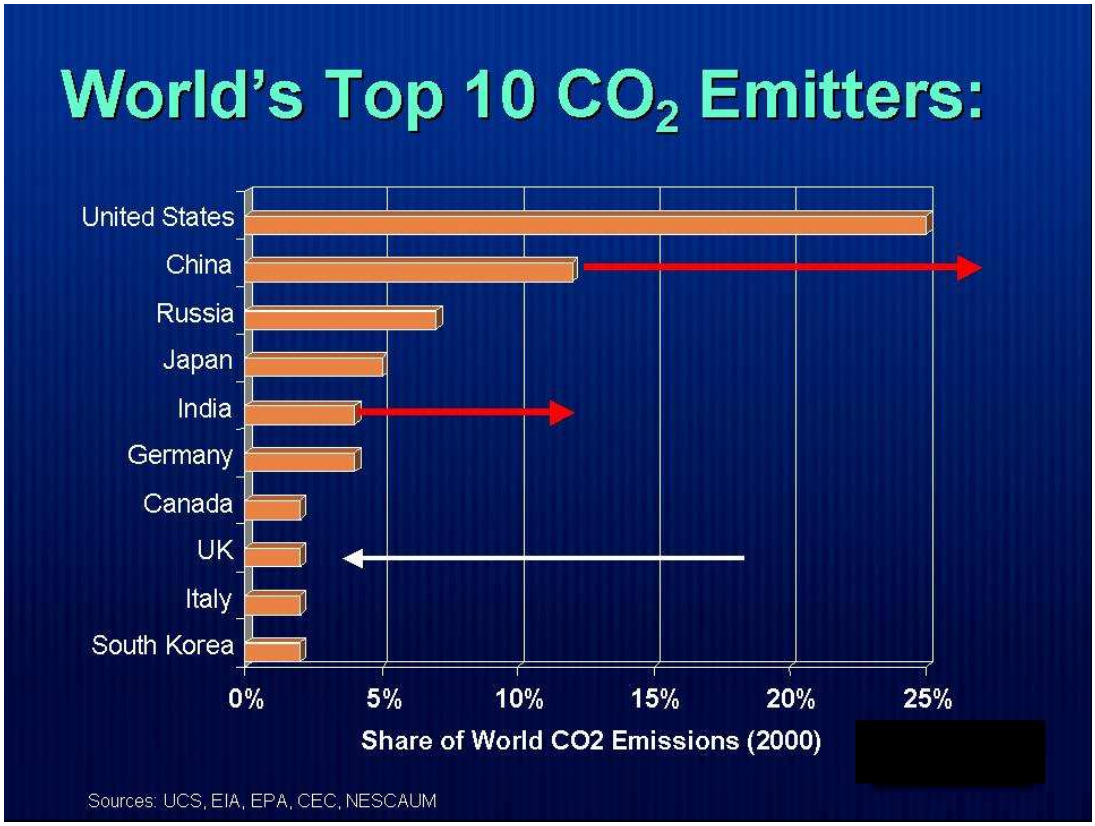
Just to remind you how this works …

Slide 10 – How global warming works

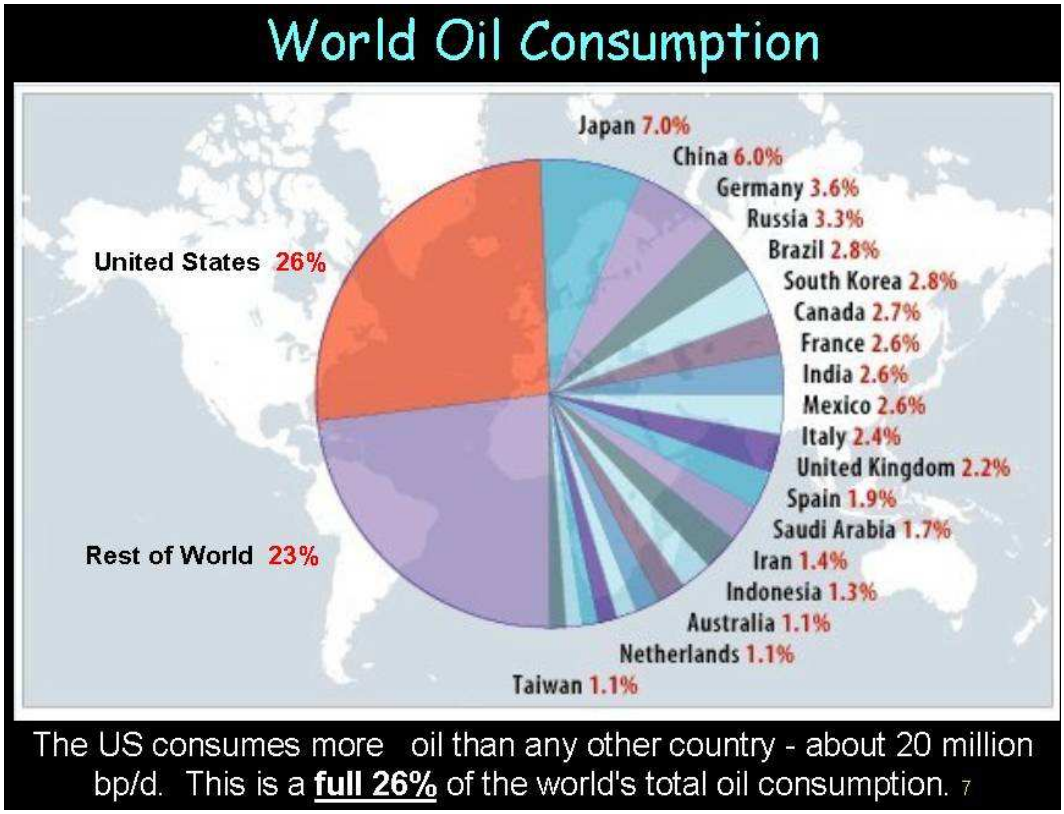


Thus the thicker our CO_2 blanket, the hotter we will get. This is where the term Greenhouse effect originates. So who are the guilty?

Slide 11 – World's top CO_2 emitters (N.B. as at the time of the lecture.)

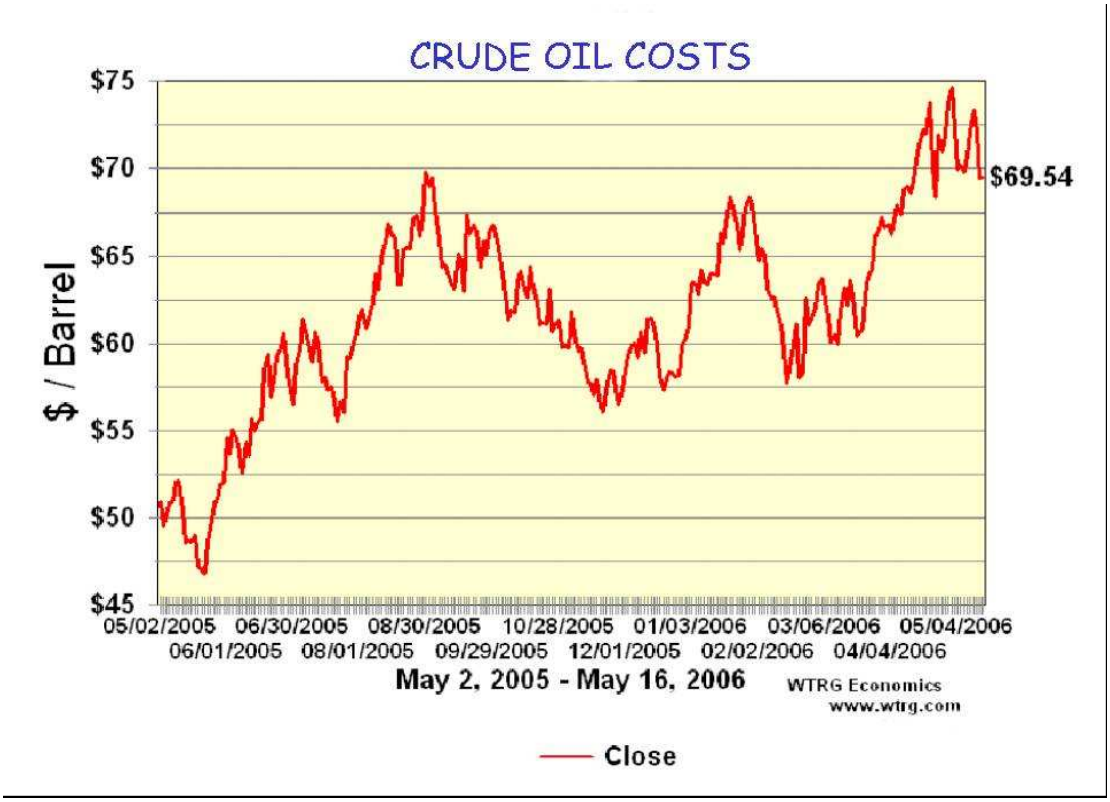


Slide 12 – World oil use (N.B. as at the time of the lecture.)



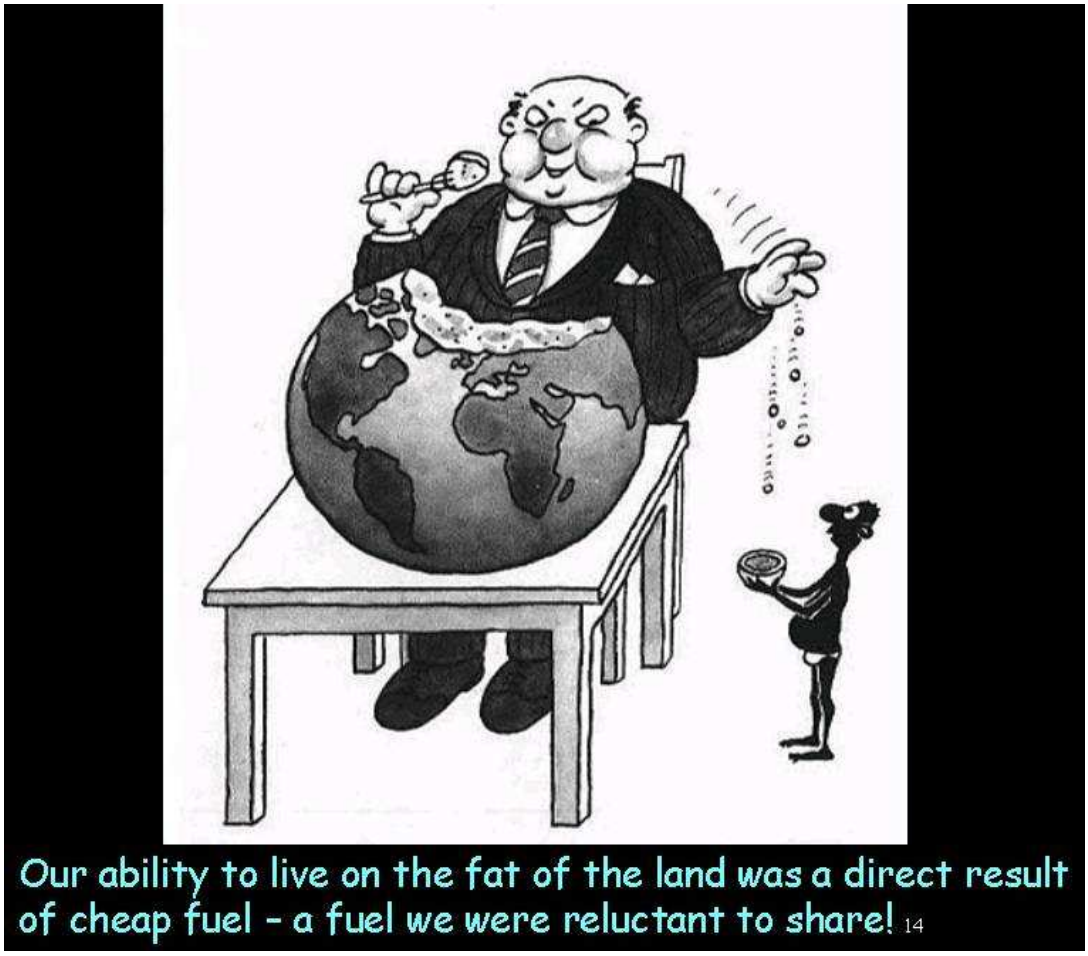
We only have to look at the price of crude oil to realise this is unsustainable.

Slide 13 – Increasing costs of crude oil (N.B. as at the time of the lecture.)



Further, we have not been keen to share this resource.

Slide 14



This has brought us to a precarious position.

Slide 15 – Scientists' warnings

We should not ignore this warnings. Scientists are generally a very conservative lot.

Government advisers are generally in tow with industry representatives. They will, and do, often given misleading advice to ministers whose portfolio they hold. Ministers are not really accountable and they often understand little of what they are in charge of. Campaigners know this from dealing with the genetic engineering and pesticide issues. The peak oil crisis is even more complex.

Only independent scientists such as those in the Association for the Study of Peak Oil (ASPO) can be trusted to give unbiased advice.

And, like the report above, it is not good. So how will it affect us?

Slide 16 – Running out of oil

We not only use oil in our cars. World air travel is expanding fast. Airlines are not keen to give out their oil usage, but it is worth looking at some figures here.

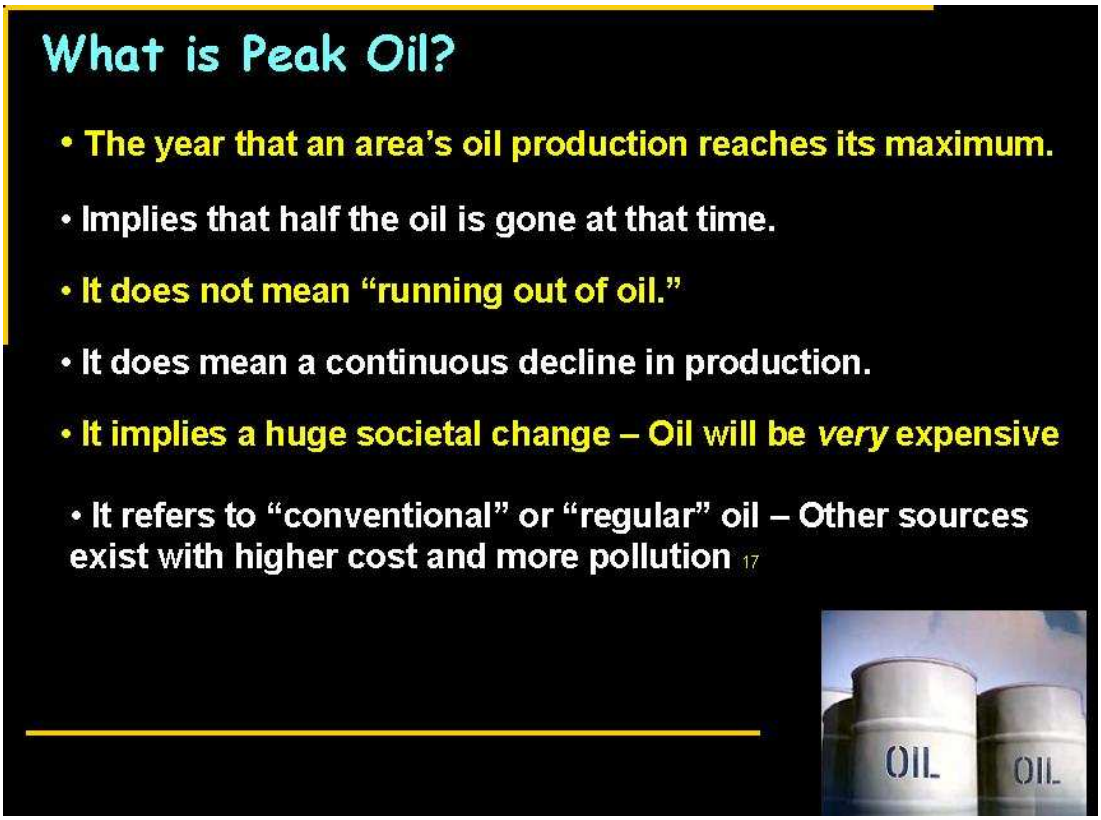
Slide 17

Obviously, we are not going to be able to continue to flit around the globe. Indeed, we may see more and more of these types of advertisement.

Slide 18 – Real Estate

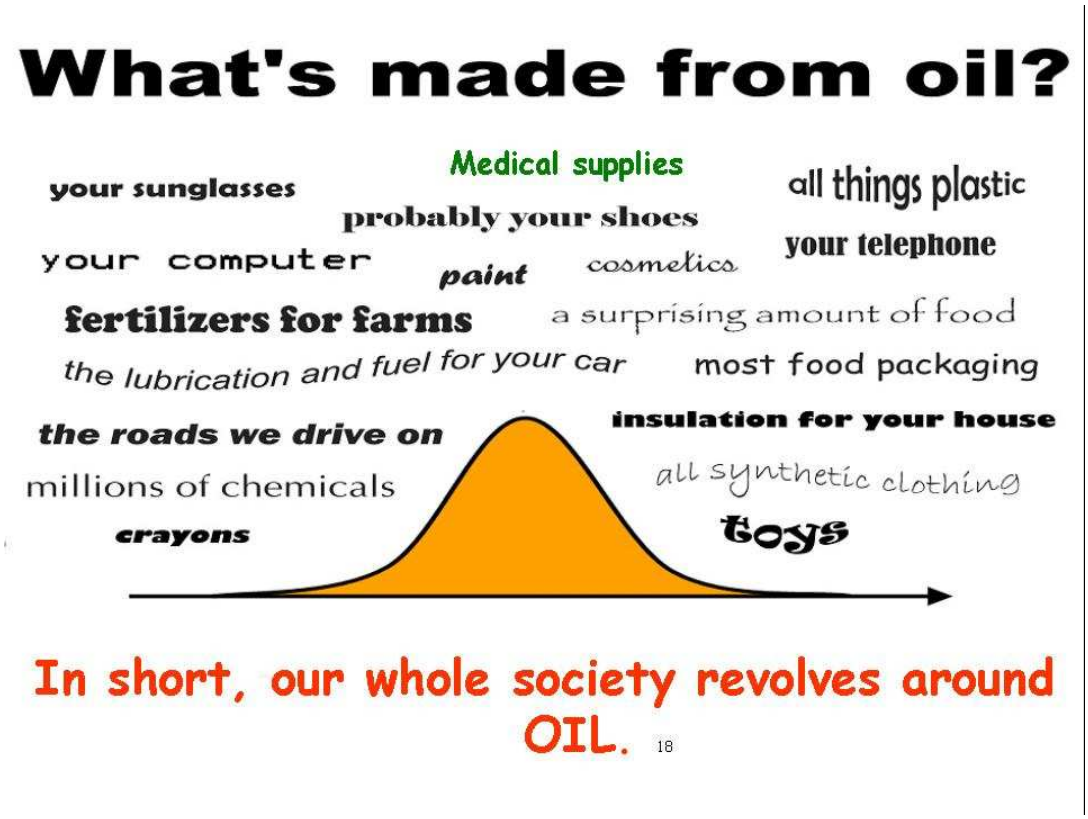
All joking aside, let us now have a look at peak oil in some detail.

Slide 19 – What is Peak Oil?



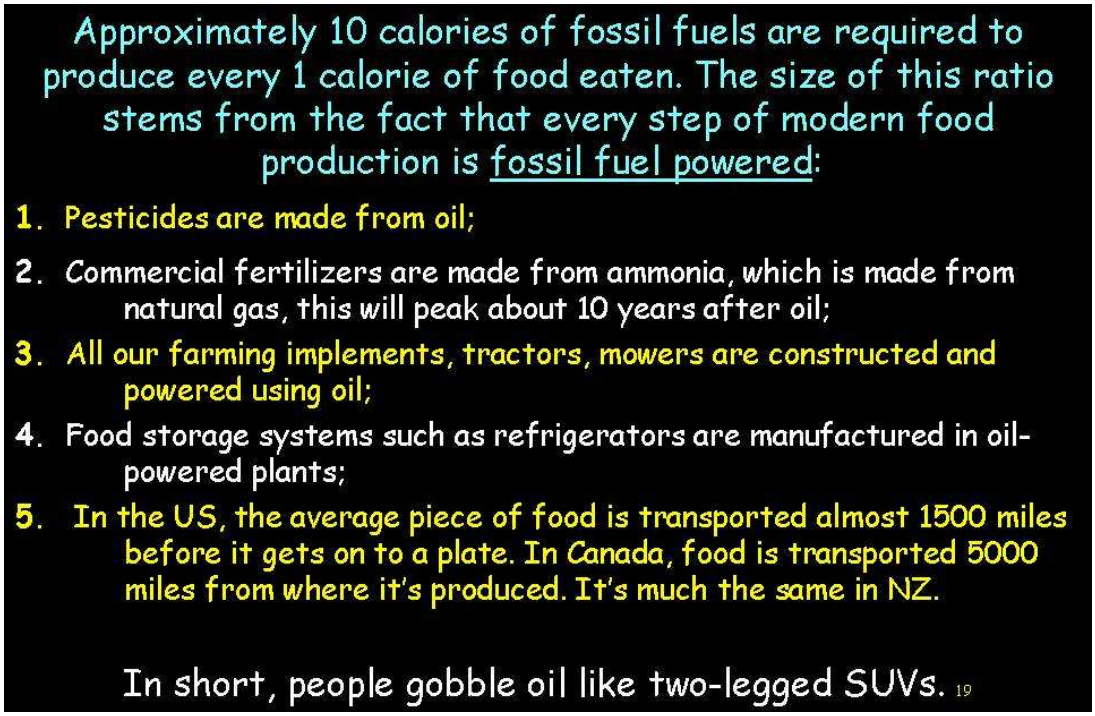
I want to look at just how desperate we will be as a society from this sinking resource. We need to look more closely at the importance of oil. What is made from oil?

Slide 20 – What is made from oil?



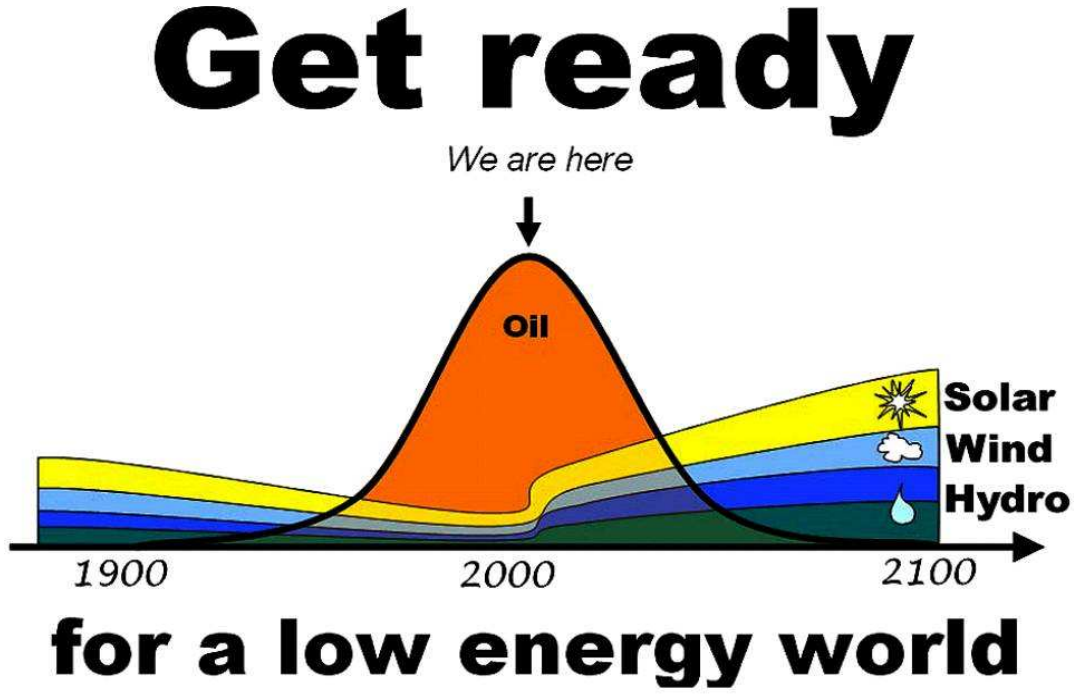
It should be obvious from this that peak oil represents a very real crisis. In light of these facts, it is also worth looking at the food producing issue in particular.

Slide 21 – Food production



So we have to get ready for a low energy world.

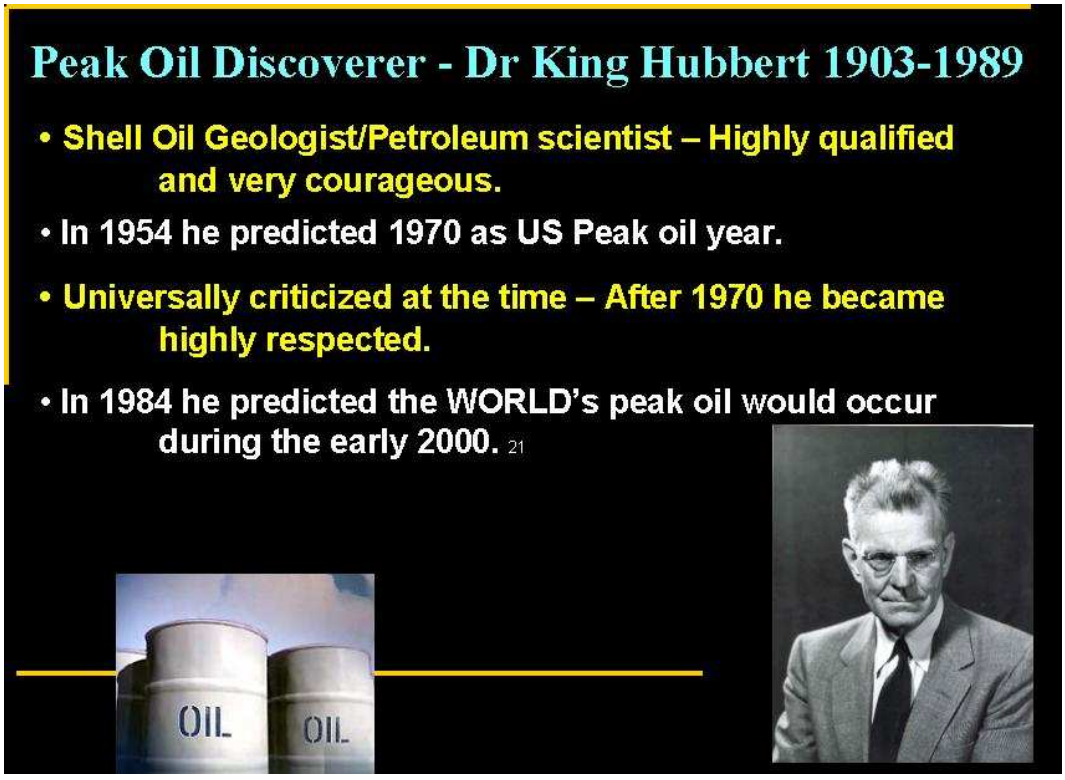
Slide 22 – A little history



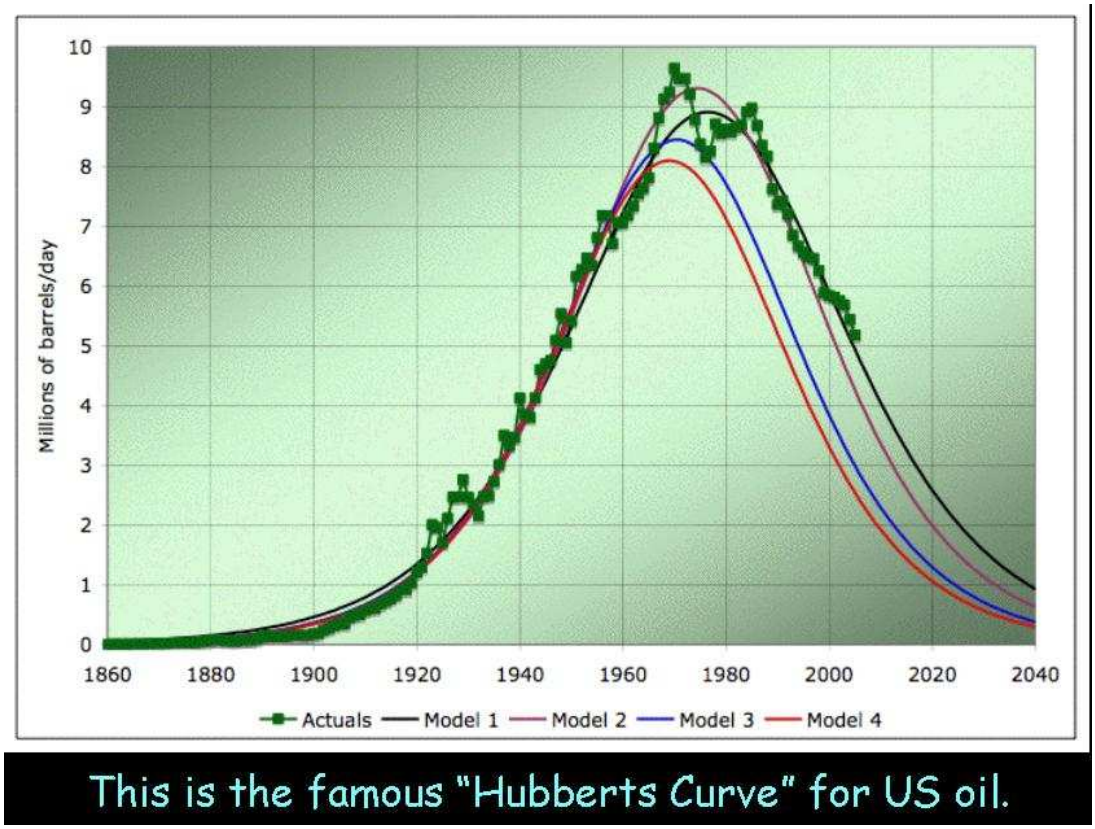
It is worth looking back at a little history. One of the scientists who first pointed out the peak oil issue was Dr King Hubbert. When he originally warned governments that there would be a peak in oil production, they simply laughed at him. Including his employer, Shell Oil.

When the US oil supply peaked in the 1970s, the laughter quickly died away. The US, for the first time, became profoundly dependent on other countries for her oil. Only after this did they realise just how frighteningly correct Hubbert was.

Slide 23

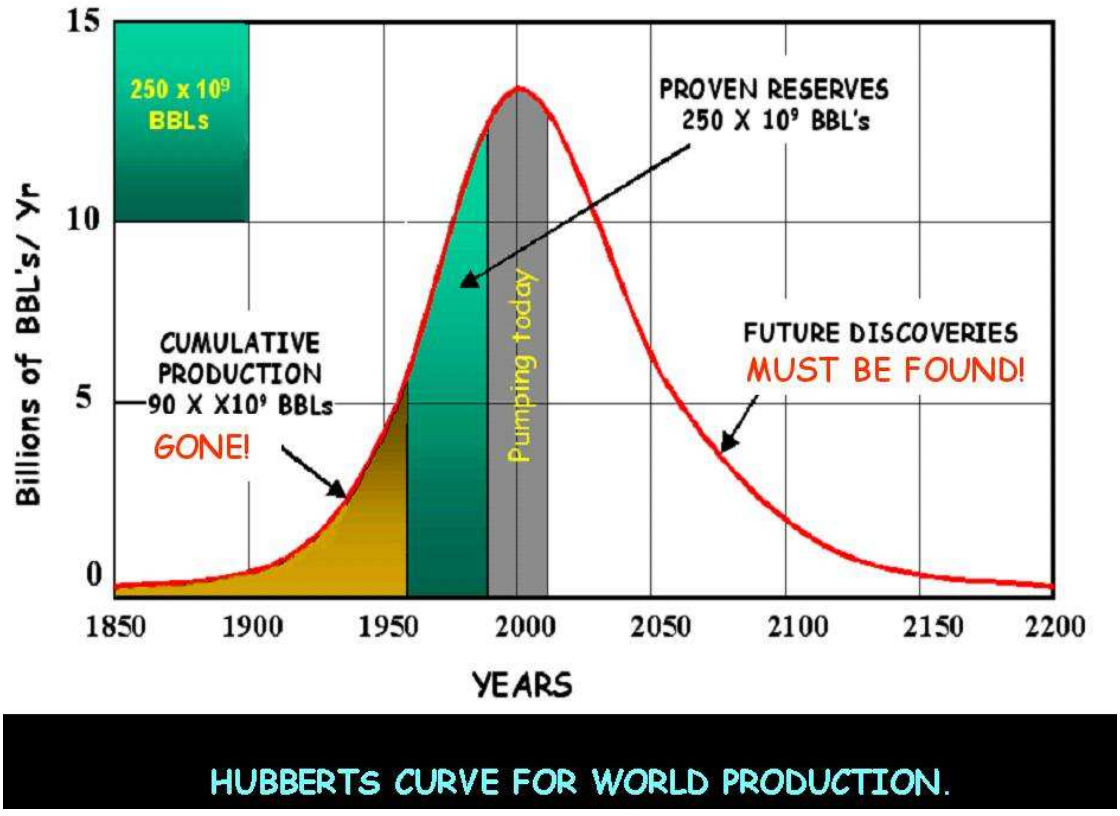


Slide 24 – What the US curve looked like



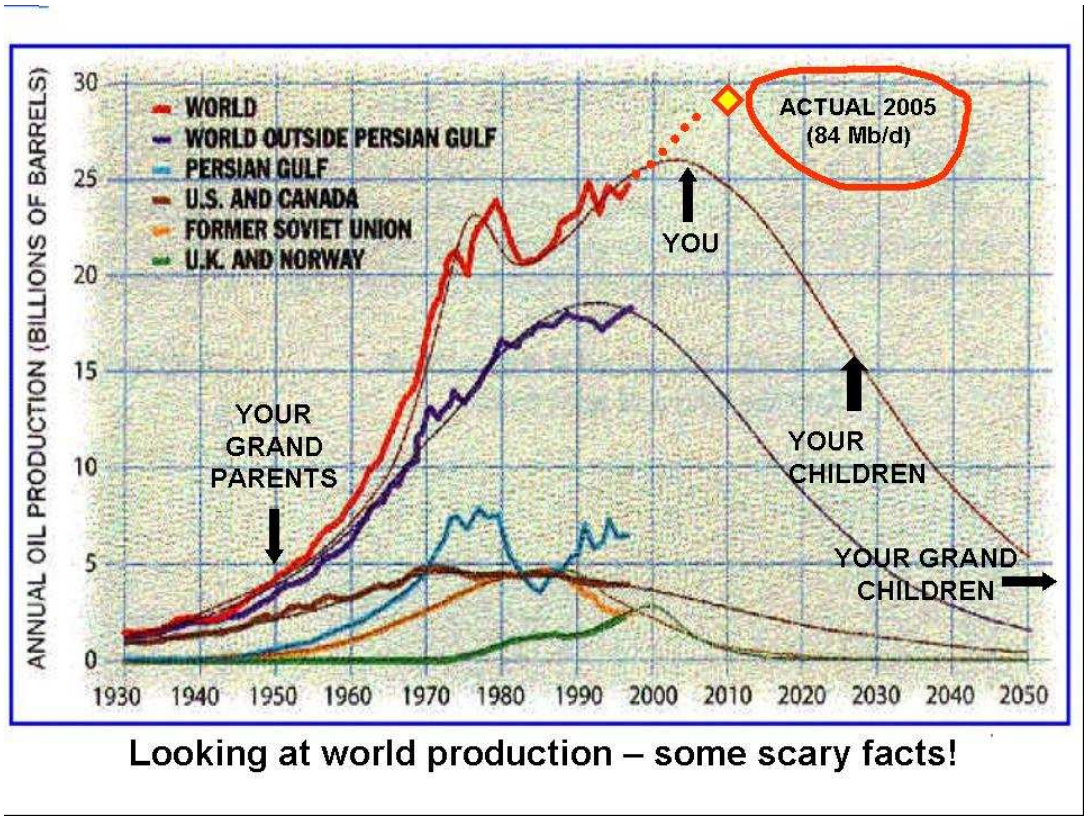
If we look now at the world's shortfall, also predicted by Hubbert, we get the following graph.

Slide 25 – Hubbert Curve



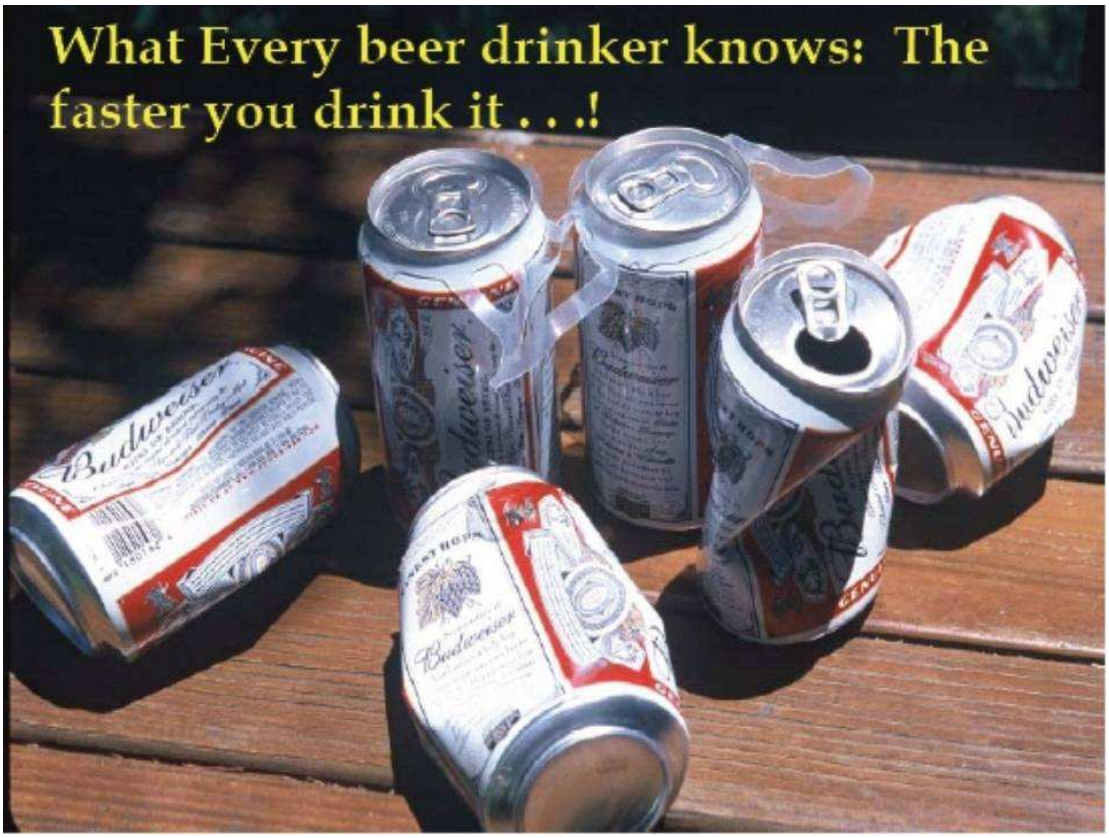
From this curve, we can see some scary facts starting to emerge.

Slide 26 – World curves with historical significance

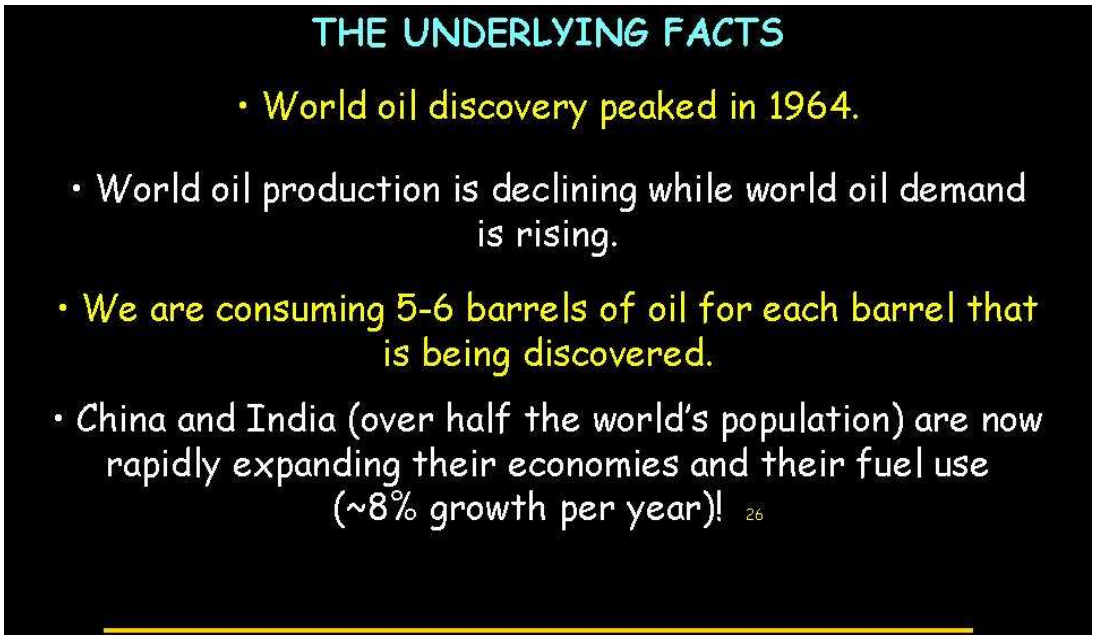


What does this mean?

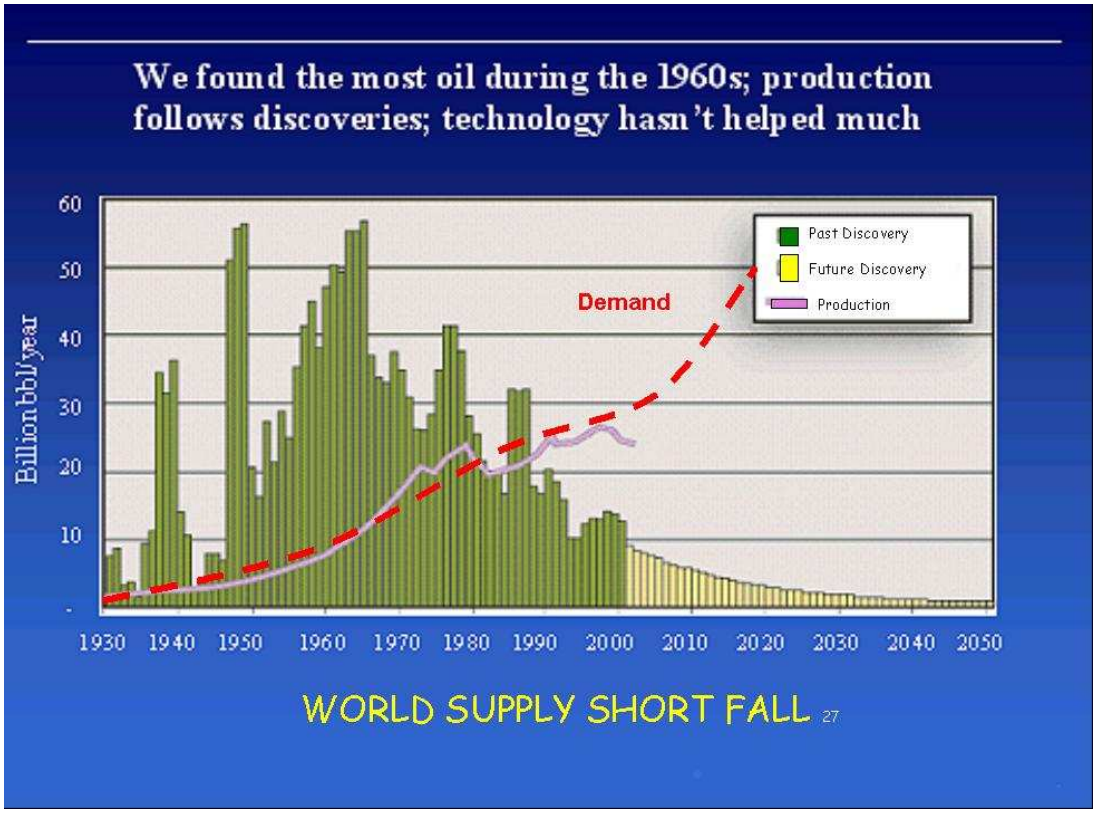
Slide 27



Slide 28 – Underlying facts

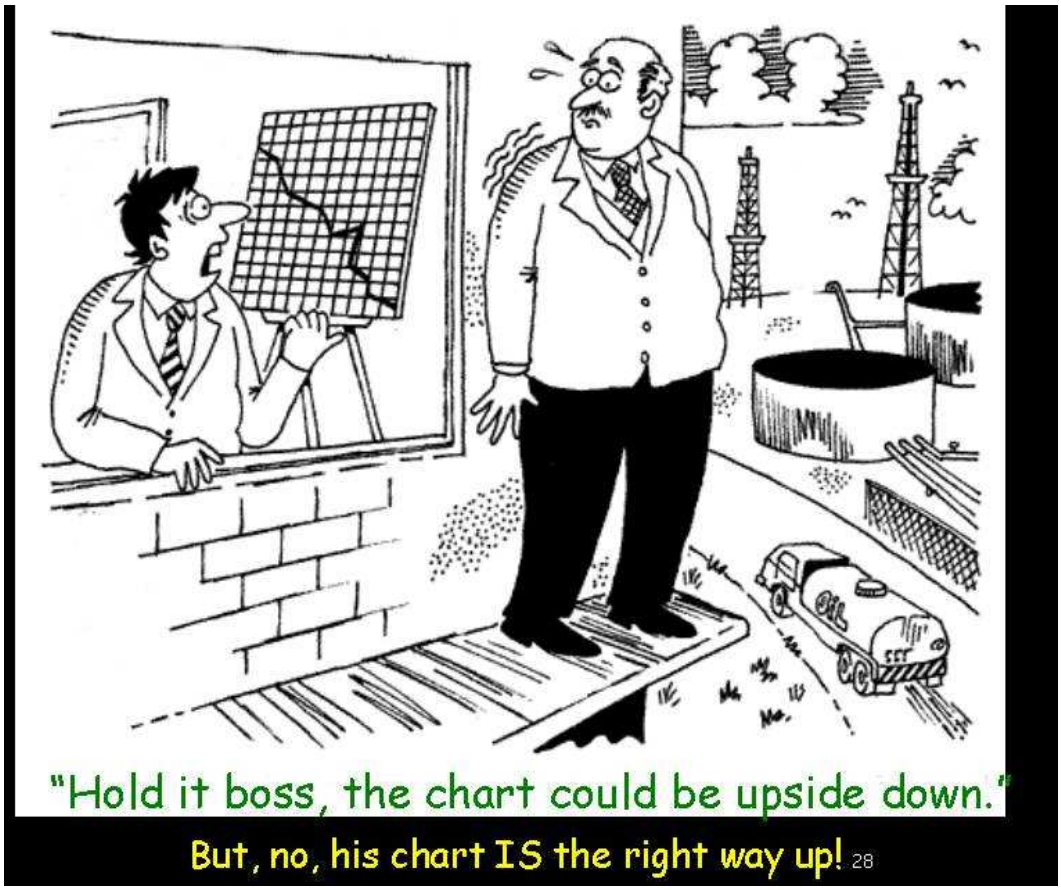


Slide 29



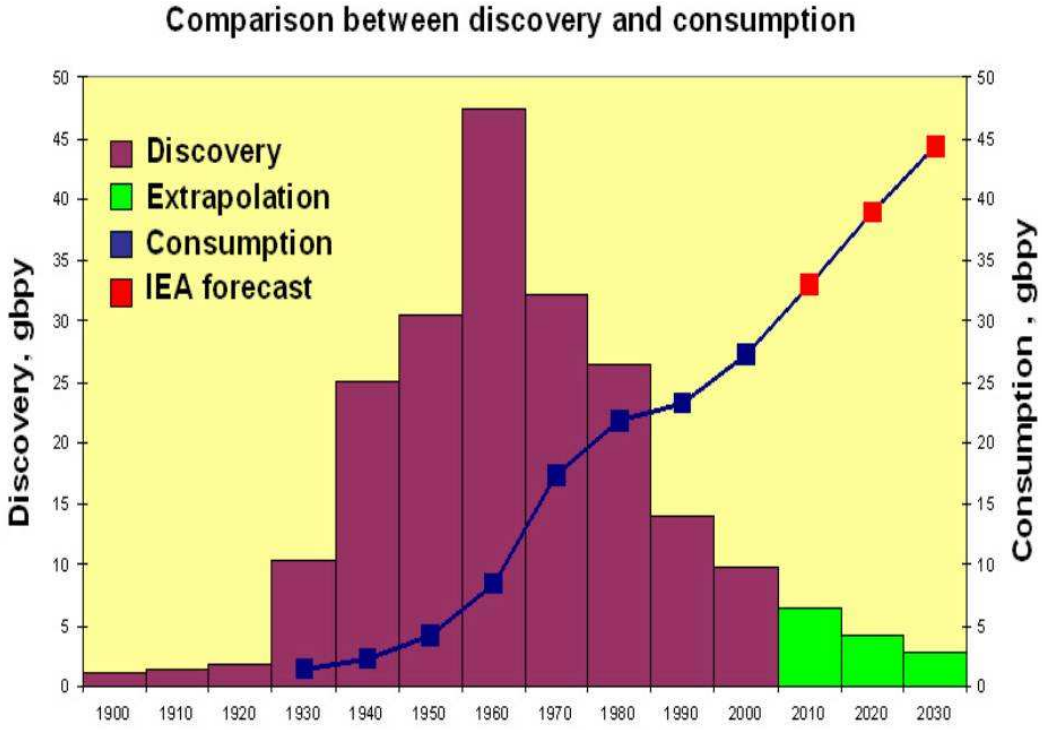
Discovery is falling, but demand is growing. On top of this, as you saw, the production forecast is falling. Even the oil companies realise this.

Slide 30



Let's compare discovery with consumption.

Slide 31



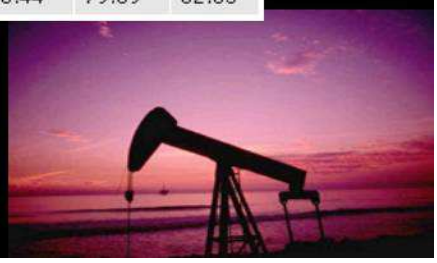
Once again, we see the same trend. A growing demand and a falling supply.

Slide 32 –

These are the growing needs but -

Oil demand by country (in millions of barrels/day)					
Country	2000	2001	2002	2003	2004
USA	19.70	19.65	19.76	20.03	20.52
China	4.80	4.92	5.16	5.55	6.63
Japan	5.61	5.53	5.46	5.58	5.44
Former Soviet Union	3.90	4.30	4.11	4.18	4.16
Germany	2.77	2.81	2.72	2.68	2.67
India	2.05	2.10	2.10	2.20	2.30
Canada	2.03	2.04	2.08	2.19	2.29
France	2.00	2.05	1.98	2.06	2.04
UK	1.76	1.72	1.77	1.72	1.86
Total World	76.95	78.10	78.44	79.89	82.63

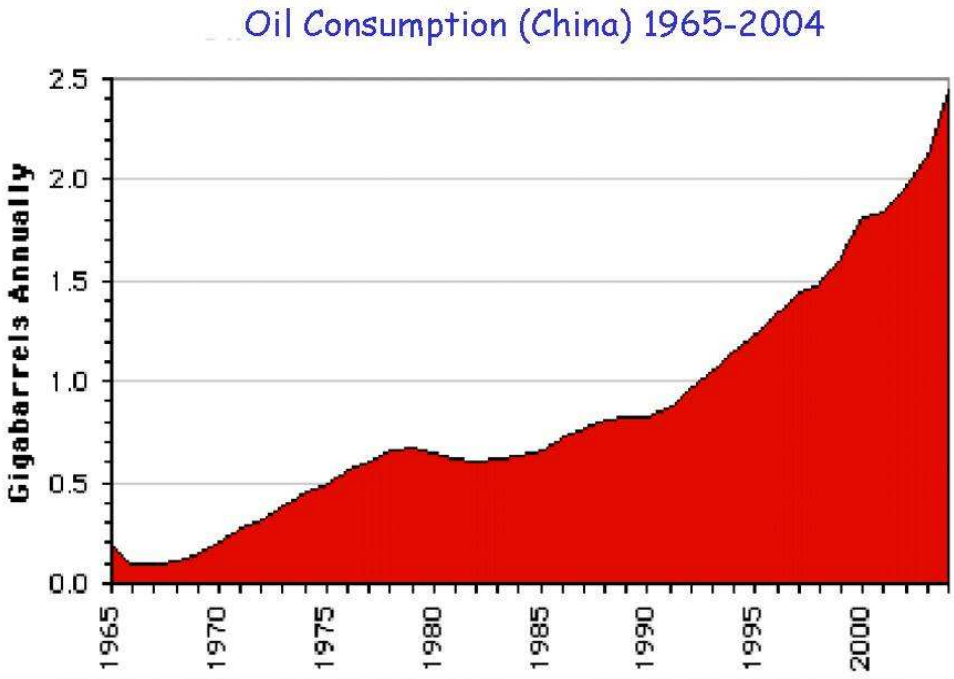
- we simply cannot meet them. We are in the 'evening' of oil production. 30



As we saw the largest slide of the energy cake is taken by the US. It is obvious that the growth of demand from the US is huge – from 19.7 million barrels in 2000 to 20.5 million barrels by 2004. This consumption is larger than that of any other industrialised nation. (N.B. as at the time of the lecture.)

What is more, as we have seen, US President, George Bush, and Dick Cheney intend to keep it that way. The real challenge could come from China and India as they each increase the demand from their expanding economy. Their people, too, want cars not bikes. For example, look at China's increase in consumption.

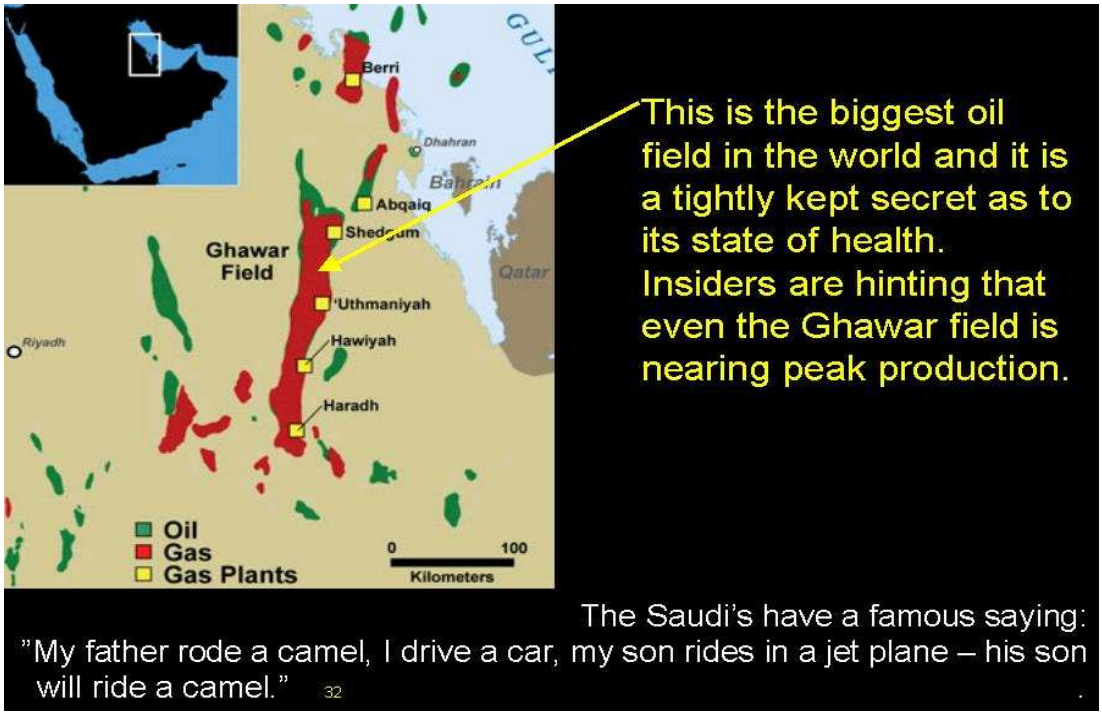
Slide 33



China's frightening consumption rise. An increase of 1259%, from 0.19 Gb in 1965 to 2.44 Gb in 2004. It is frightening to extrapolate into the next decade. Source: BP

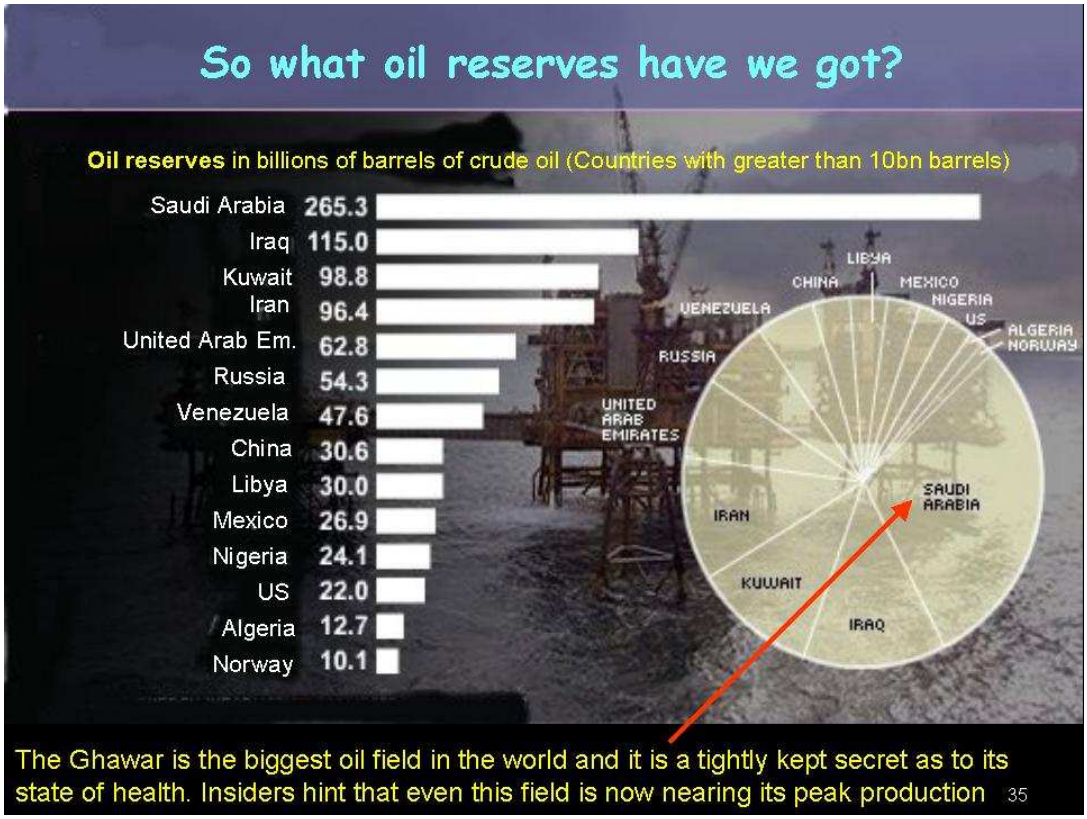
We have not found any more giant oil fields to feed this growing demand. Even the largest Saudi fields are now in question.

Slide 34 – Ghawar field



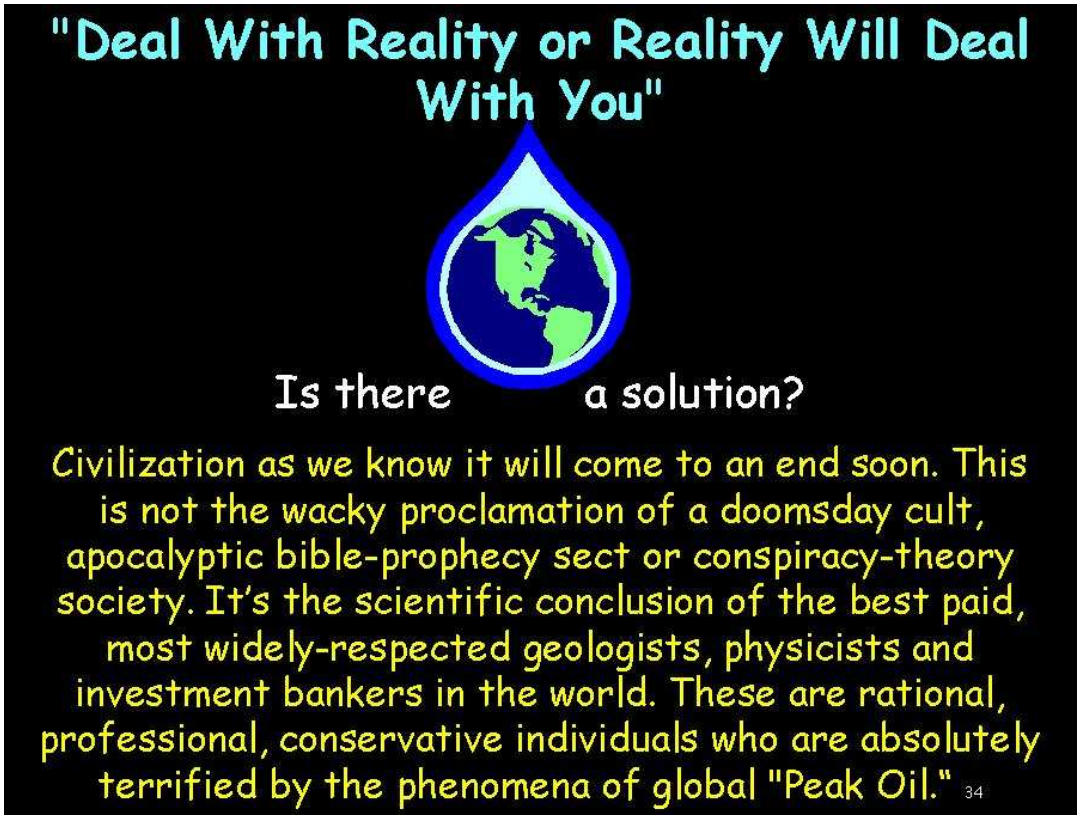
Media reports claim the Saudi Royal family is in disarray with internal squabbling - including over oil – and is of serious concern, for the US in particular. (N.B. as at the time of the lecture.) If this field begins to dry up, it will have major effects on world oil exports. Let us look at the reserves we have to date.

Slide 35



Obviously, this is a frightening picture in the light of the rates of growth mentioned earlier. We need to look very seriously at a solution to this before it becomes too late. We must …

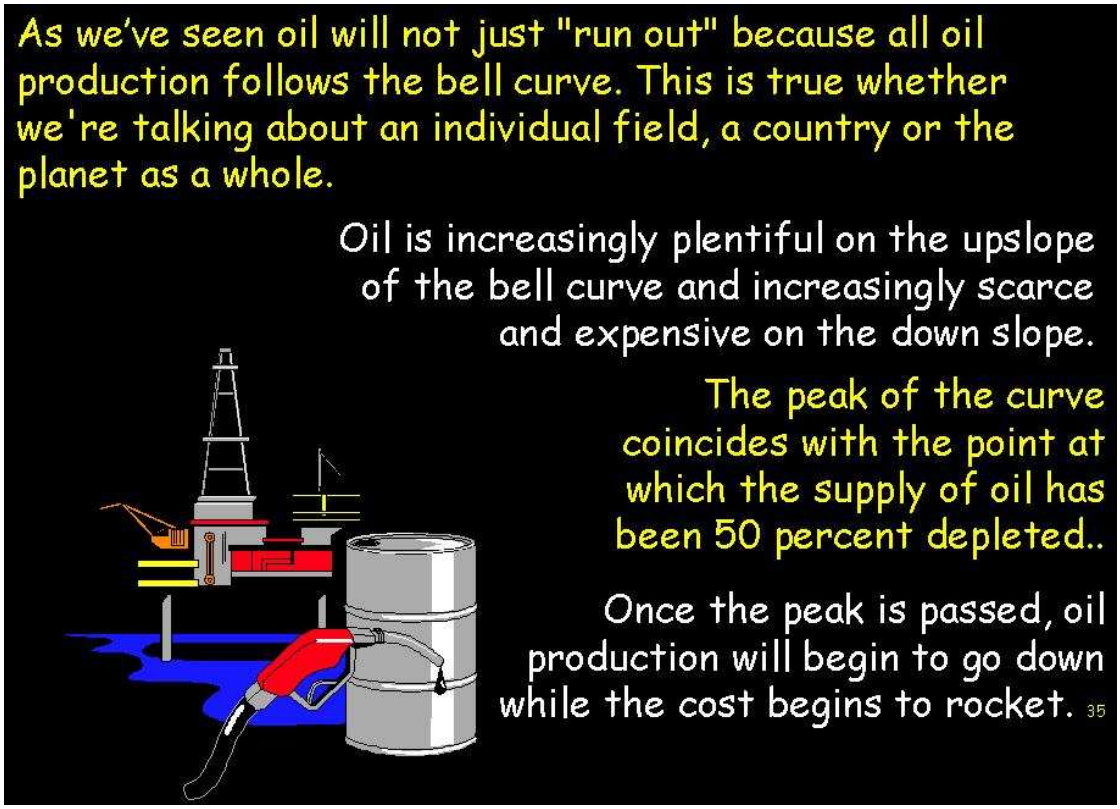
Slide 36



These professionals are only too aware of the consequences of running over to the downside of Hubbert's curve. It will get harder and harder to pump the remaining oil from the ground. The windbaggery of economists, that we simply throw money at boring more holes, is ludicrous. Just as one advisor to the White House said, and I quote, "It's nonsense, we have a 100 years of oil left."

So they may wish.

Slide 37 – Oil does not just 'run out'



It is essential that people be told the truth. Not only will oil and other costs rise dramatically unless people understand the real cause, potentially we could have anarchy. People are generally very sensible when told the truth - a simple fact often forgotten by politicians - and they must be told that it is a natural depletion and not the petroleum giants trying to screw them for more profit.

Slide 38

Slide 39 – Media headlines

Do not take my word for these please. Do your own research and make sure it is from non-indentured sources. And just in case you think our government has this in hand, I suggest you read the following.

Slide 40

Dr Cullen was Associate Minister of Finance 1987 – 1989, Treasurer 1999 – 2002, Minister of Revenue 1999 – 2005 and Minister of Finance 1999 – 2008 in the New Zealand government.

You can now see why scientists are worried. This was an appalling admission. It makes you wonder just what government advisers are telling our ministers. *Don't worry, it's all okay, we'll use other alternatives*. There is NO combination of alternatives that will allow us to continue to run New Zealand in the way that we run it at present. No amount of solar, wind or even nuclear energy is going to allow us to live in this fast lane much longer. Alternatives are essential, but they represent only small lifeboats to aid our transition. The government needs to act immediately to avert this crisis just as Iceland and Sweden are doing. So what *can* we do?

Slide 41 –

If you're in shock and want to interact with others about these issues, check out the various websites. Understand being in shock is normal when it comes to learning about these issues.

We all need to tell friends and family, but be forewarned, most people don't take kindly to this information.

Your best bet is to either send them an email with a link to some of the excellent Peak Oil sites or give them a DVD copy of the "The End of Suburbia." 39

I was appalled when a New Zealand MP suggested that, "unlike the Green's, we have no need to panic the public." I have sent the entire Iceland project to Jeannette Fitzsimons, Green Party Leader, and many others are pouring information into government. Let me show you the typical rhetoric going on in the house.

Slide 42

THE PICTURE IN THE HOUSE

JF asking….

TREVOR MALLARD: I think that the Greens are right to put these matters before us, but I don't feel quite the same sense of urgency that they do.

JEANETTE FITZSIMONS: With reference to that last question, is the Minister aware that Goldman Sachs is predicting a price of over US$100 per barrel shortly and that there has already been a futures trade for US$100 per barrel for June this year?

TREVOR MALLARD: I am not aware of the Goldman Sachs predictions. I'm aware of the futures trade, and I have my bike out.

PETER BROWN (NZ First): Is the Minister aware that Green members are going around this country talking about Peak Oil; and does the Minister share NZ First's view that there is a difference between high-priced oil and Peak Oil, and that it does a great disservice to NZ as a whole for party members to go scaremongering around the country, as Greens members have been? 40

We are a small island nation of very innovative people. If we plan, we can succeed just as Sweden, Iceland and others are doing. They are busily acting now. In case you are unfamiliar with their projects, let us take a look.

Slide 43 – Projects

We certainly have some challenges to face.

Slide 44

WE NEED INTERNATIONAL CO-OPERATION

We are all in the same boat!

Clearly, we would do better to engage the nations of the world in a competition to achieve sustainability, instead of a consumption contest! 42

Slide 45

GRAND CHALLENGES

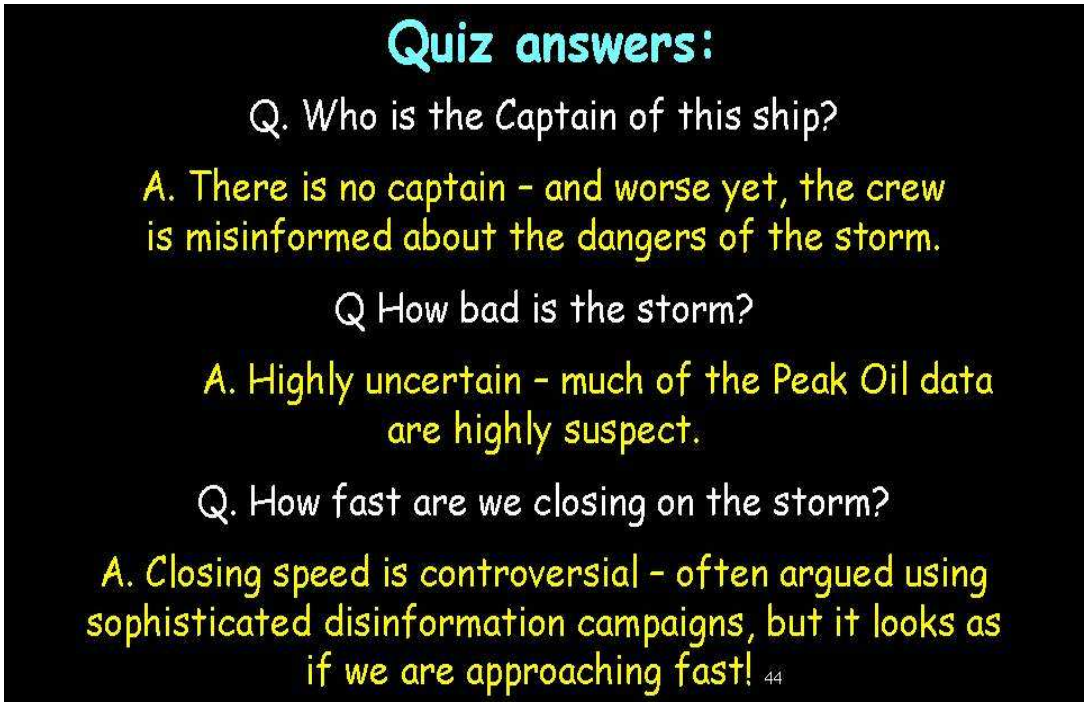
Where great challenges are well understood, humanity has proven very adaptable and innovative but there is. . .

- Great need for better and more reliable data
- Urgent need for frank and factual public discourse

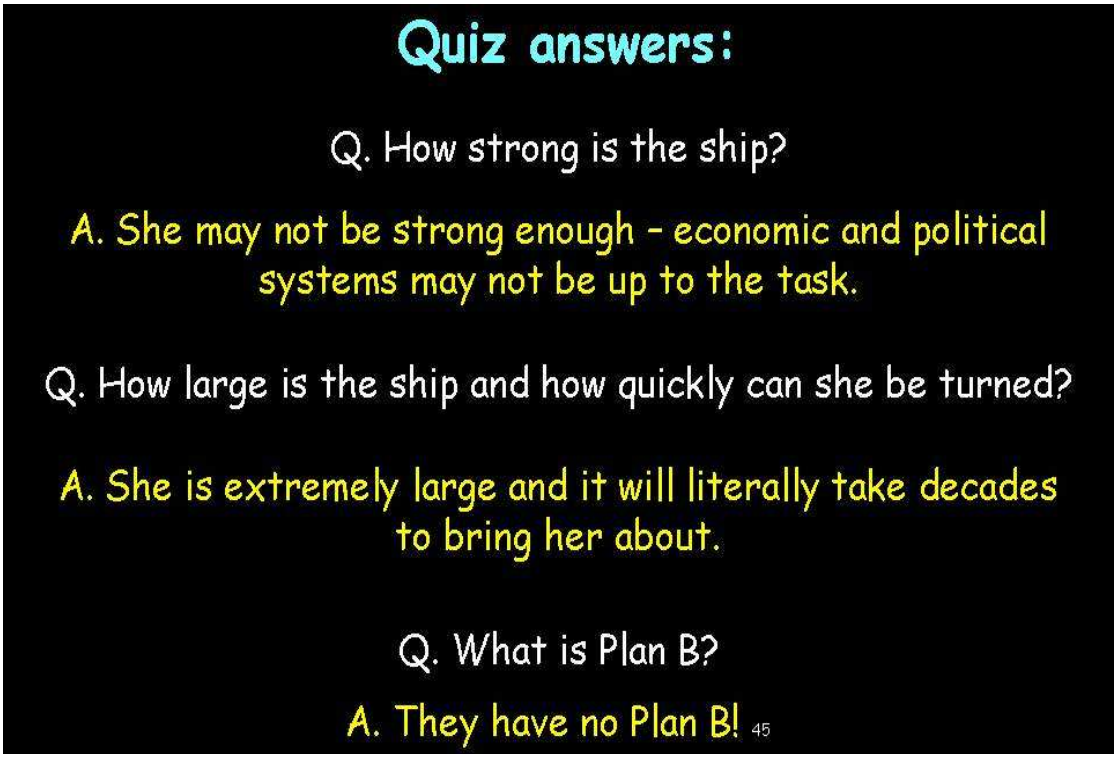
- However . . . it's political suicide . . .
- Who will step up to the plate?
- Probably no one until it's too late!
- We are the critical component of Plan B! 43

Let's return now to our ship analogy and see what answers we can come up with.

Slide 46



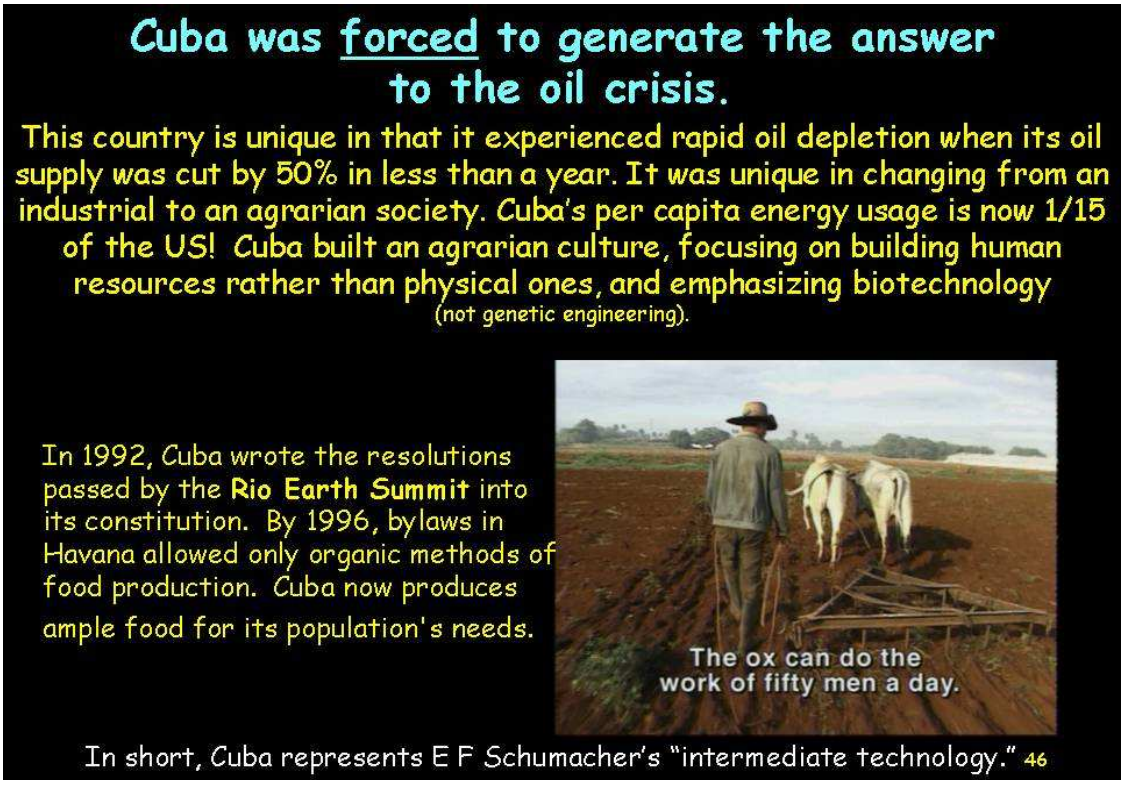
Slide 47



I want to talk here about a remarkable country: Cuba.

Cuba is a prime example of a country that was forced to adjust to having no oil. The US, backed by Britain, made sure that Fidel Castro received no oil. The idea, of course, was to collapse his regime.

Slide 48 - Cuba



Before any one brings it up … I know Cuba has problems, but overall I believe they should be congratulated, if only from the point of view that they beat the US bullying efforts to starve them out.

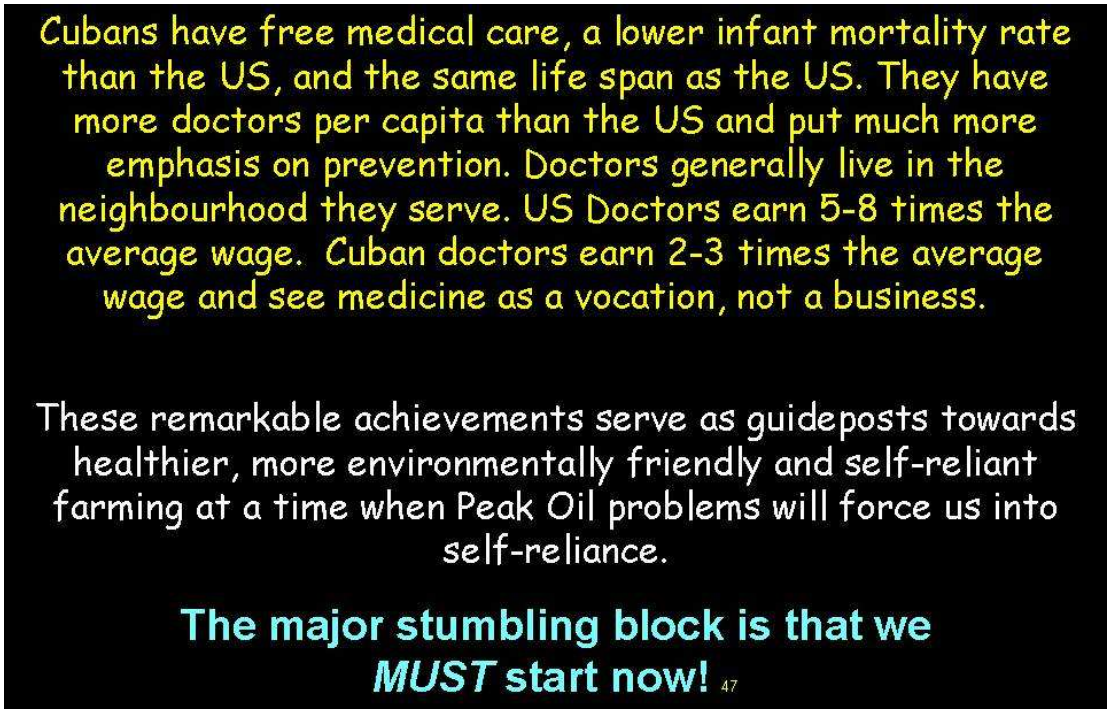
In many ways, Cuba and New Zealand are similar. They are small (111,000 km^2 for Cuba and 270,000 km^2 for NZ in land area), 110,000 km^2 of which is farmable and thus comparable. Both are isolated geographically. New Zealand has a population of four million and Cuba 11 million, and a determined leader.

Cuba has had to deal with a far-reaching US oil embargo which critically affected virtually everything on the island. In the face of these problems, Castro produced a new and discerning revolution – to completely transform the country's agricultural system from an intensive, mono-cultural system to a smaller, more organic one. Production and storage were moved closer to urban areas to reduce transport costs. Urban agriculture was introduced, ranging from personal gardening (similar to allotments in the UK) to organised farms within the urban or greenbelt areas.

Other techniques were used to replace the oil previously used. Oxen replaced tractors and the use of natural pest control was researched and encouraged.

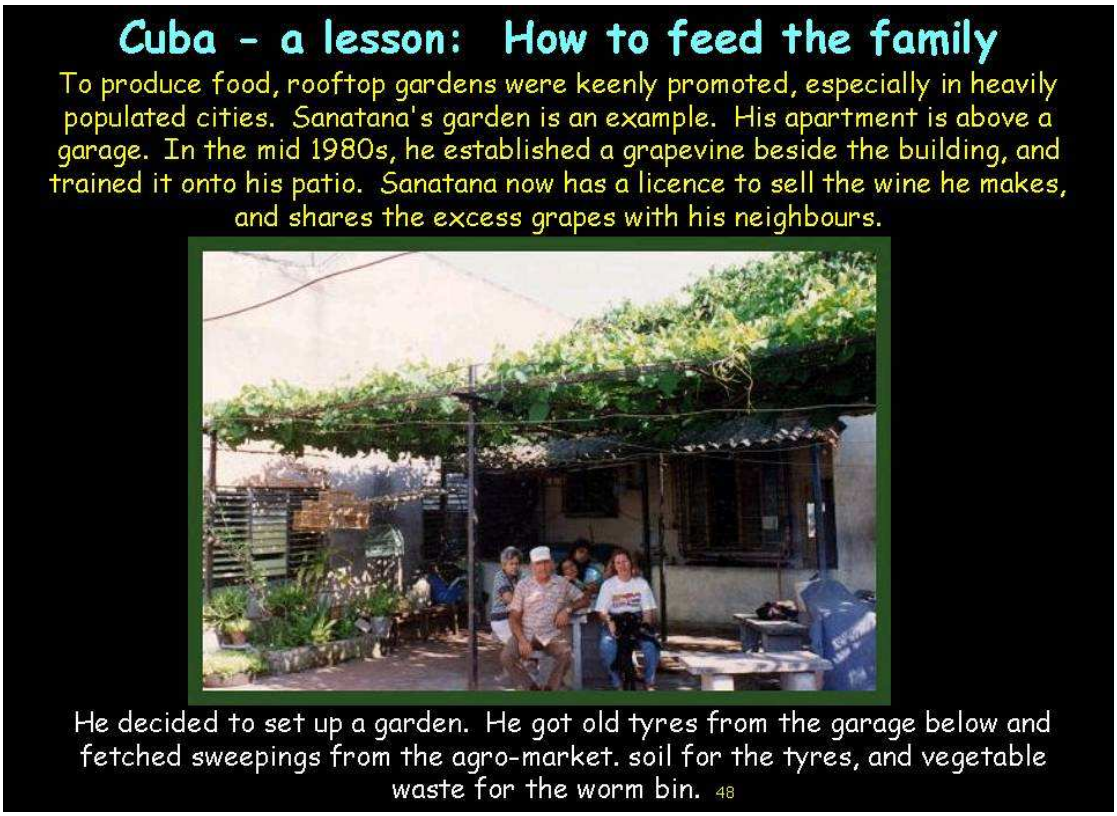
State incentives helped reverse the flow of population from towns to the country. Some of their social services are now certainly an eye opening, as many tourists have seen. Let me show you.

Slide 49 – Cuban statistics



So it need not be all gloom and doom. With determination and sensible assistance from government, we can also do it. But we have to wake up government to the urgency of the situation. Waiting for the last man standing is not a sensible option here.

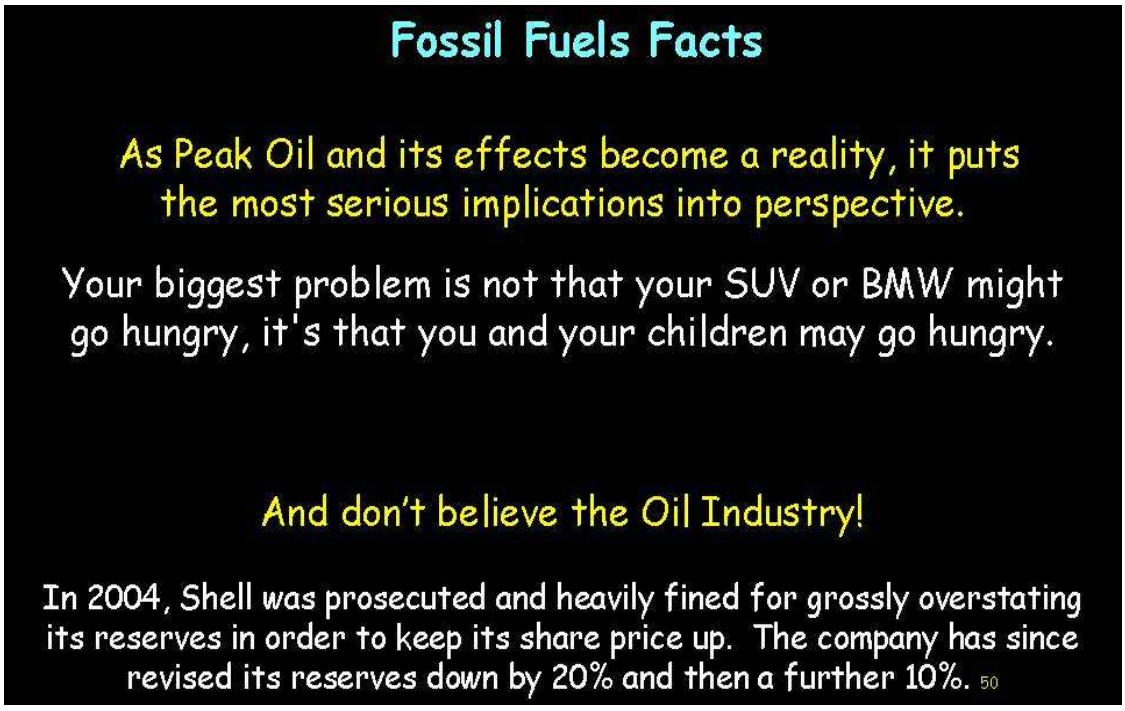
Slide 50 – Putting food in our mouths



Slide 51

Let’s now look at some fossil fuel facts.

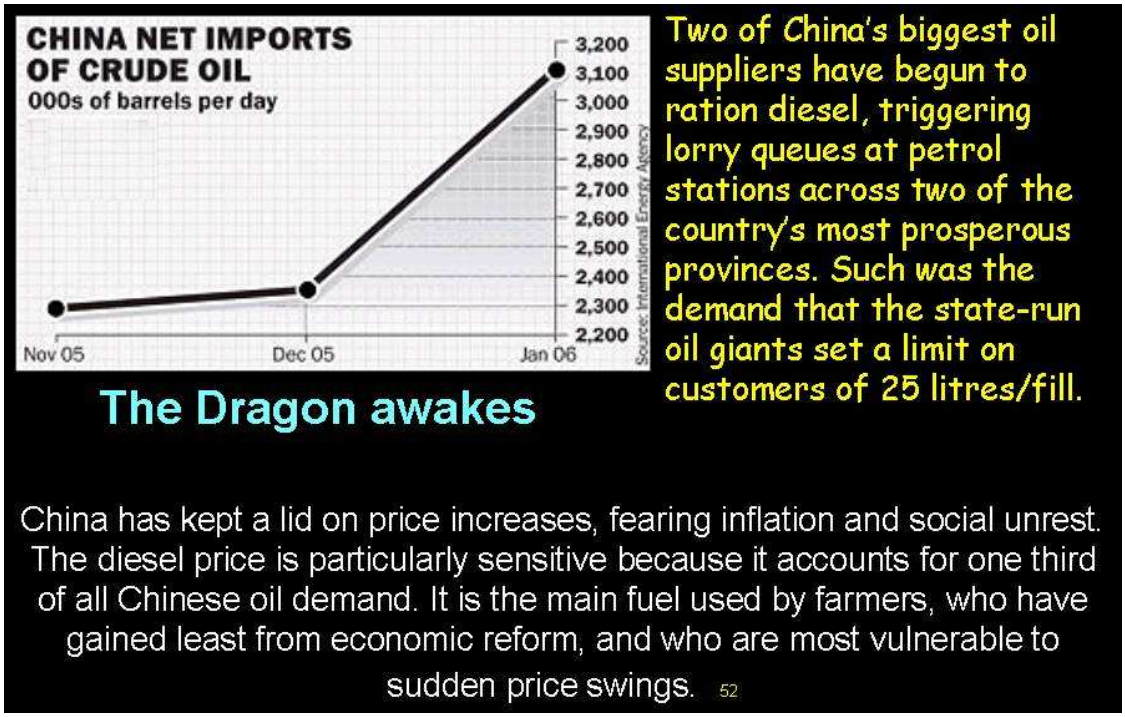
Slide 52 - Facts



This puts the Gulf Wars into an entirely different perspective. For example:

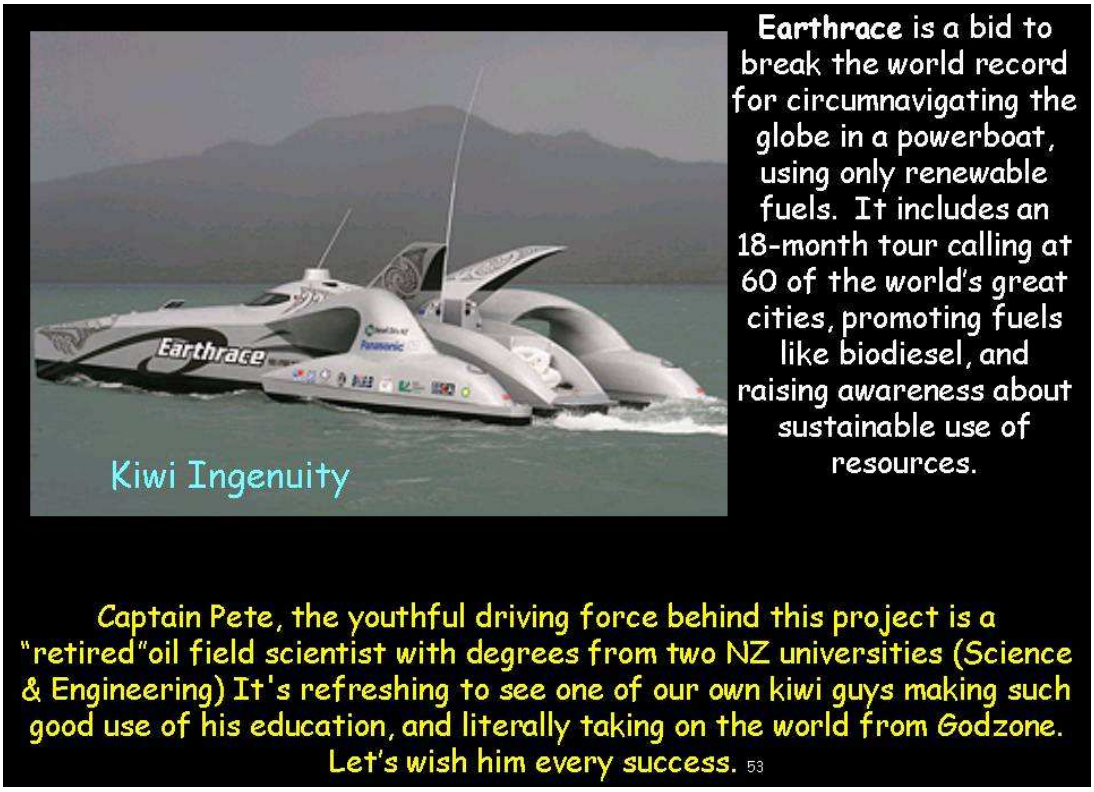
Slide 53

Slide 54 – China



India, too, will be feeling the pinch.

Slide 55 – Ingenuity - overcoming the odds



There are many people tackling the issue: one in a shipping container, another in the back yard. What we need are more governments and scientists to take the issue seriously.

Slide 56 – Our choice

Slide 57

For this..

It's really up to all of us! 55

Slide 58 – Food

Chocolate biscuit paradox

Germany makes cars, Italy clothes, France wine and Britain pharmaceuticals – and they buy and sell to each other. At least, that's the theory. But, according to the UK Interdependence Report, this is the annual picture.

- Britain exports 1145 tonnes of chocolate biscuits to Germany. And Germany exports 1728 tonnes back to the UK.
- Britain exports 5417 tonnes to fresh, boneless chicken cuts to France and the French export 3952 tonnes back.
- Britain exports 10,000 tonnes of milk and cream – and imports virtually the same amount from France.

Shipping vast quantities of identical goods in this way (1) has serious adverse environmental impact, (2) will exacerbate climate change and (3) wastes oil reserves.

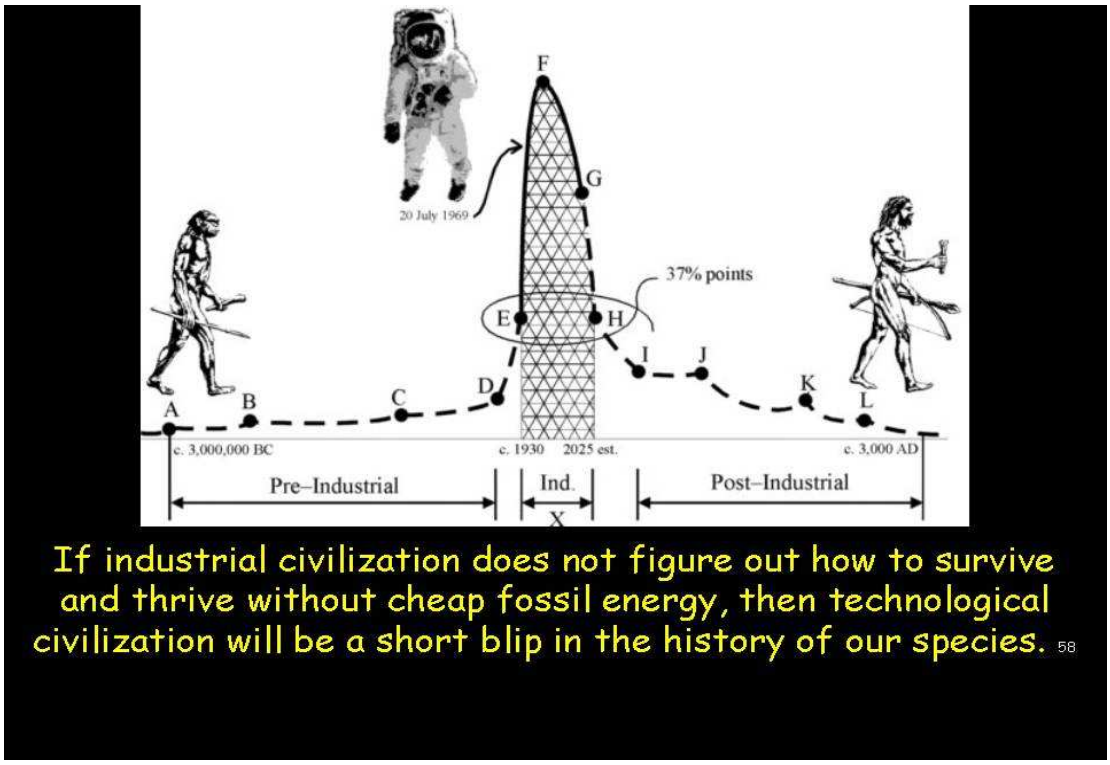
In short, a global economy built on, and blind to, its own fossil fuel dependence simply cannot survive in its current form. Globalisation is dead in the water! 56

Slide 59

Why are we not doing this on a much larger scale?

If we continue down the present road, we may be seen in years to come as simply a blip on the historical time scale.

Slide 60 –



There is, however, light at the end of the tunnel.

Slide 61

Slide 62 – What can we do?

SO WHAT CAN WE DO?

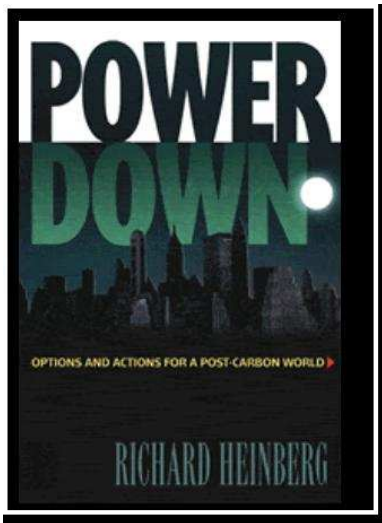
- Become informed: use the internet and alternative media
- Talk to your family and friends
- Write letters to Ministers; they do answer.

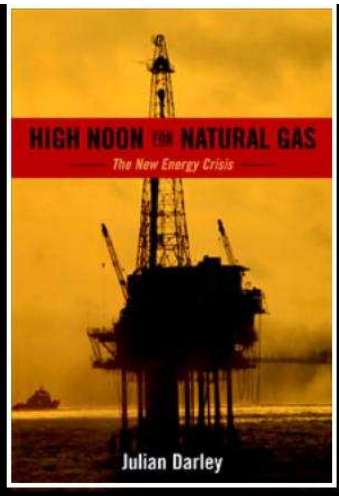
Letters to parliament do not require a stamp.

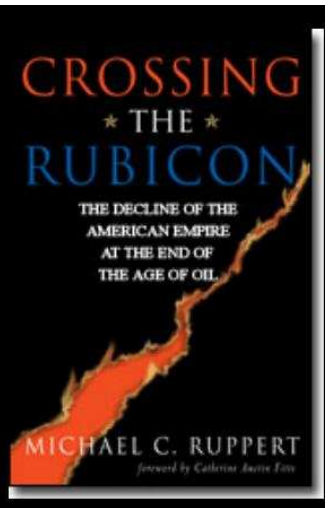
- Encourage people to attend public events like this one; they are good educational strategies.

A demonstration of 100,000 Peak Oil truth supporters at the Beehive next year would be hard for the Media to ignore. 61

Slide 63 – Read and research



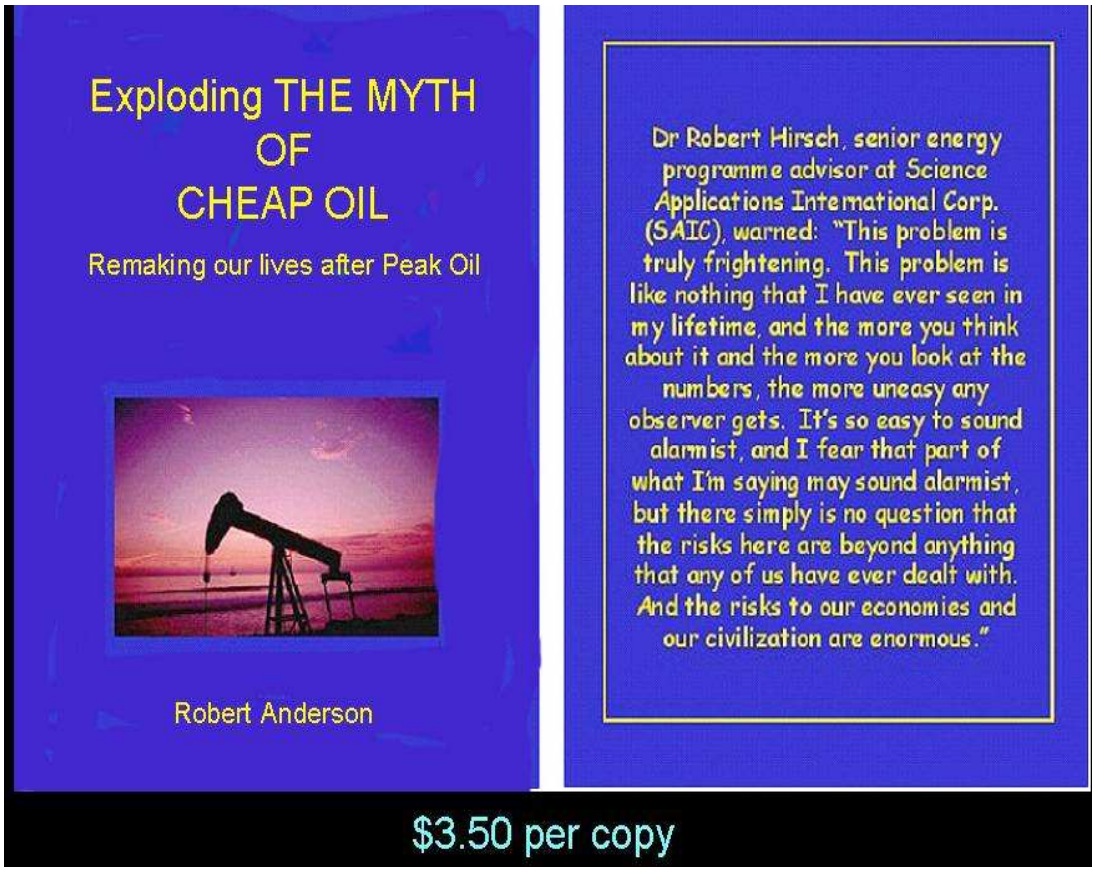




3 Books on Peak Oil:

Power Down by Richard Heinberg
High Noon for Natural Gas by Julian Darley
Crossing the Rubicon by Michael Ruppert 62

Slide 64



Enquire for updated details on books by Robert Anderson at blaseco@clear.net.nz

Slide 65

Slide 66 – On the lighter side …

A lot of folks still can't understand why we could have an oil shortage here in New Zealand. Well, there's a very simple answer.

The reason for that oversight is purely geographical.

Our OIL TANKS are in Auckland,

Our REFINERY is in Northland,

Our OIL WELLS are located in Taranaki. . . .

And our DIPSTICKS are all in WELLINGTON.

Slide 67

Let’s get the message out there.