

PEAK OIL

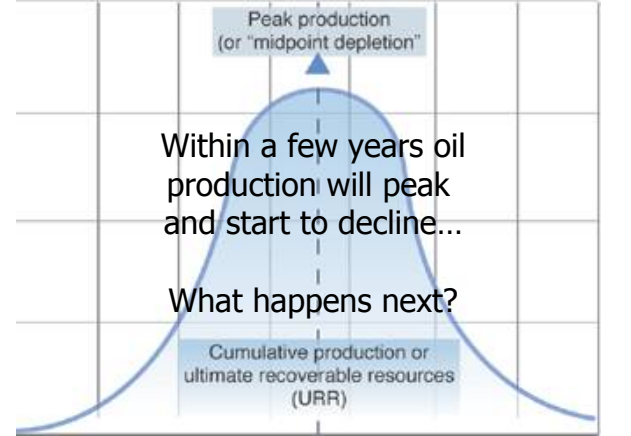
For 150 years we have acted as if oil would never run out. Consumption has grown seven fold in the last 50 years and continues to increase at over 2% a year. But **oil is a finite resource and we're about to hit production limits that could change the world forever.**

Governments and oil companies misled by quoting the RP (reserves to production ratio) and say there's enough for 30 to 40 years.

In reality oil cannot be extracted at a constant rate right up to the last drop. **When about half the oil is gone production peaks and every year after that less oil is available.**

In 1999 North Sea oil production peaked and is now in decline at over 5% per year. The USA peaked in 1971 and now produces half volume it once did. In all, over 30 of the major oil producing nations have peaked.

PEAK OIL refers to the point where world oil production peaks and starts to decline. This is likely to occur just a few years from now.



See: glogreenparty.org.uk transitiontowns.org

What about Natural Gas?

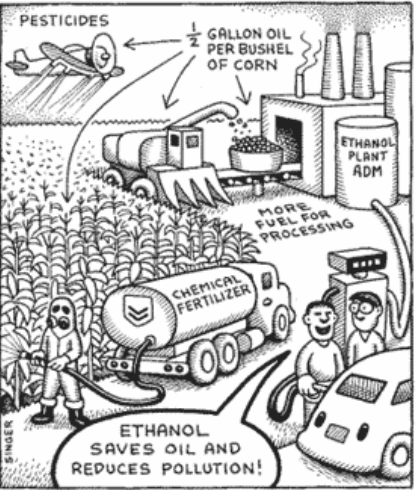
Natural Gas is also a finite resource. It now accounts for 22% of world energy use and that percentage is increasing. Used primarily for heating and electricity generation it is also possible to use gas to power vehicles.

However Natural Gas will also peak and then decline even more rapidly than oil. The peak is estimated to be around 2030.

Isn't this good news for global warming – we'll be forced to cut CO₂ emissions?

Unfortunately the easiest way to make good the energy shortfall is to burn coal instead. That'll produce a lot more CO₂ than gas or oil. Clean coal technology will help improve power station efficiency but it won't stop CO₂ emissions.

Surely there are other energy sources that can fill the gap?



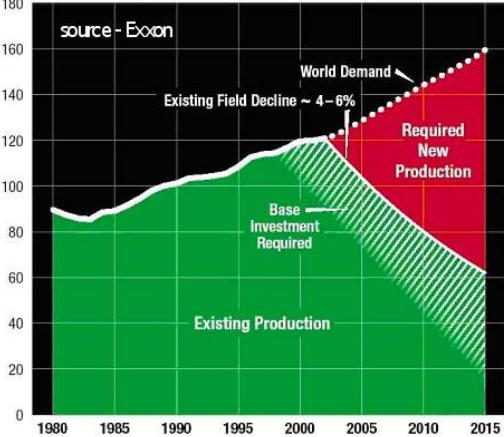
We use so much oil for so many purposes it's not at all easy to fill the energy gap. For example bio-fuels have to be produced in the right way or they consume more oil than they replace. (See EROEI inside this leaflet).

The only place with substantial stocks – and even this is not certain – is the Middle East, in particular Saudi Arabia. Even Exxon now predicts a NON OPEC peak of production within 5 years, many other analysts think it will come sooner. So, as shortages start to take hold, we will become increasingly dependent on the politically unstable countries of the Middle East.

The western world depends on oil for 40% of all the energy we use and 95% of transport fuel. Modern food production methods also require vast quantities. Not only for mechanised equipment and transport but also for artificial fertilisers, pesticides and weed killers.

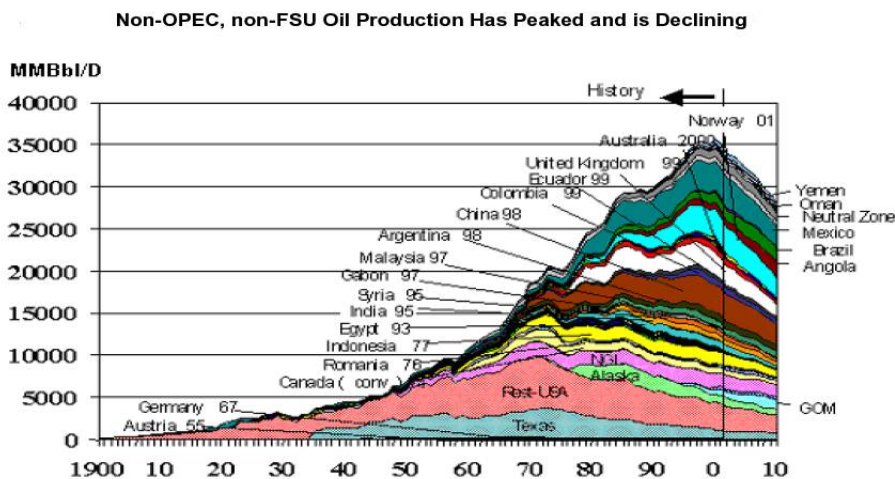
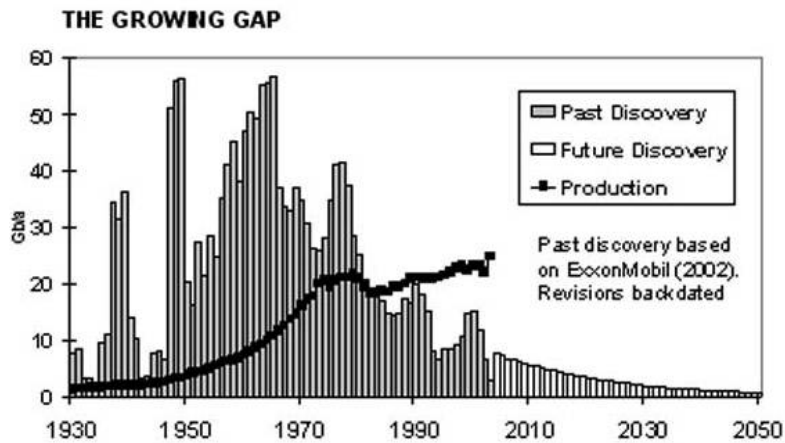
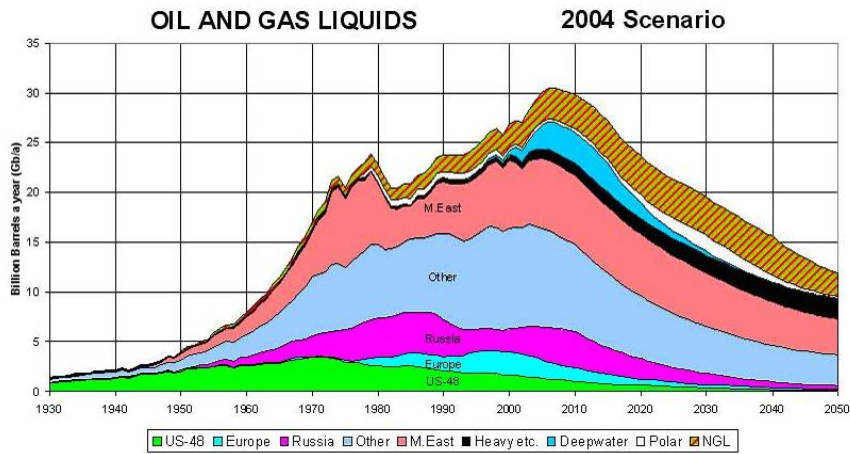
Current world consumption of oil is around 84 million barrels (a barrel is 35 gallons or 159 litres) of oil per day, around 30 billion per year. Depletion from existing fields is running at around 4 million barrels per day, year on year. Add in new demand and world production has to increase by 6 million barrels per day, each year, to keep up. That's 30mbd extra to bring on stream by the end of this decade and that isn't possible.

Millions of Barrels per Day of Oil Equivalent (MBOOE) - total for oil and gas



Even now there's no slack in the system. That's why a single event like hurricane Katrina can send oil prices soaring. PEAK OIL is a turning point in modern industrial society... the question is what happens next? **The response to peak oil we advocate is called re-localisation. In the UK this is being pioneered by the Transition Towns movement.**

Produced by Stroud Green Party and Transition Stroud



When will PEAK OIL occur?

Estimates vary but most analysts predict between now and 2015.

It will not be a smooth bell curve like the theoretical one on the front of this leaflet. The top graph on the left shows the peak as predicted by ASPO (the Association for the Study of Peak Oil). Demand dropped due to the oil shocks of 1973 causing the dip in the graph. The projected decline will likely be bumpier than shown. Massive investment in new extraction methods may prolong the plateau but then decline will be more rapid.

What happens after the PEAK OIL?

No one can be sure. There is a wide range of opinion, from the optimistic economists who believe market forces and technology will provide substitute supply, to those who point out there is a match of energy supply to economic growth. They say declining energy supply leads to economic depression.

Most likely, short term, we'll see a cycle of high oil prices that slow the economy reducing demand and oil price. Then improved growth will increase demand and raise prices leading to further demand destruction. Overall prices will continue to rise to well over \$100 per barrel.

Then of course the USA may use its military might to obtain control of Middle East oil before the terrorists or Chinese do...



What will you be driving in 2020?

There must be other energy options?

There are fewer options than you might think. Mining oil and gas has been very cheap and very efficient. When looking at energy sources it's important to consider the EROEI – the Energy Return On Energy Invested. In the past big oil fields had an EROEI as high as 100:1 but as the oil is harder to obtain this falls to 20:1 or less. Unconventional oil sources, like tar sands have an EROEI of 3:1 – this means it's far harder and more expensive to obtain the energy.

Renewable energy; solar, wind, wave, tidal, hydro and biomass, is the ultimate goal. But these are sparse sources and it's doubtful they can be scaled up to meet current demand.

Other fossil fuels; coal, tar sands, oil shale, methane hydrates are the business as usual route to more supply – but disastrous in terms of CO₂ emissions.

Nuclear; fission will likely see resurgence but uranium reserves are limited. It's also very expensive and dangerous. Fusion is still experimental and won't be viable for decades, if at all.

Hydrogen; is not an energy source it's an energy store – it's got to be made using gas or electricity.

Energy efficiency and reduction in demand is by far the quickest and cheapest approach... but that will require lifestyle changes... or rationing.

Further Reading

There are a lot of books – here are some of the best:

- The Party's Over - *Richard Heinberg*
- The Long Emergency - *James Howard Kunstler*
- Half Gone - *Jeremy Leggett*
- Twilight in the Desert - *Matthew R. Simmons*

Websites

Plenty of websites – and they link to others:

- www.powerswitch.org.uk (PO portal)
- www.odac-info.org (Chris Skrebowski)
- www.museletter.com (Richard Heinberg)
- www.transitionculture.org (Rob Hopkins)
- www.transitiontowns.org (TT hub)