Peak Oil In 2012!

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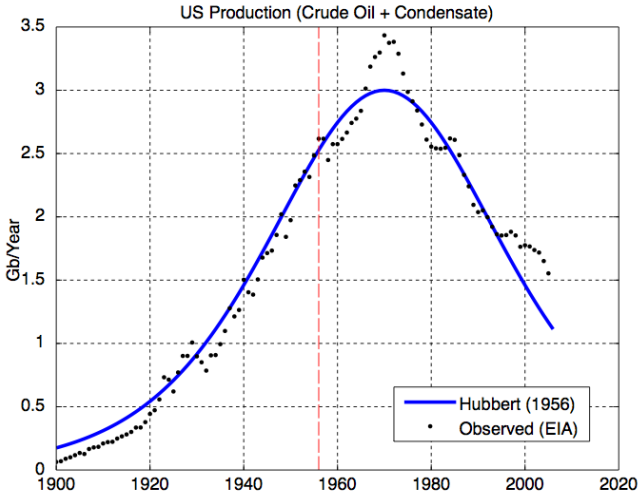
Introduction

Sometimes people talk about "running out of oil", but the world will never completely run out of oil. There will always be some oil remaining somewhere that can be scavenged from old fields, reclaimed from tar sands or stripped from oil shale.

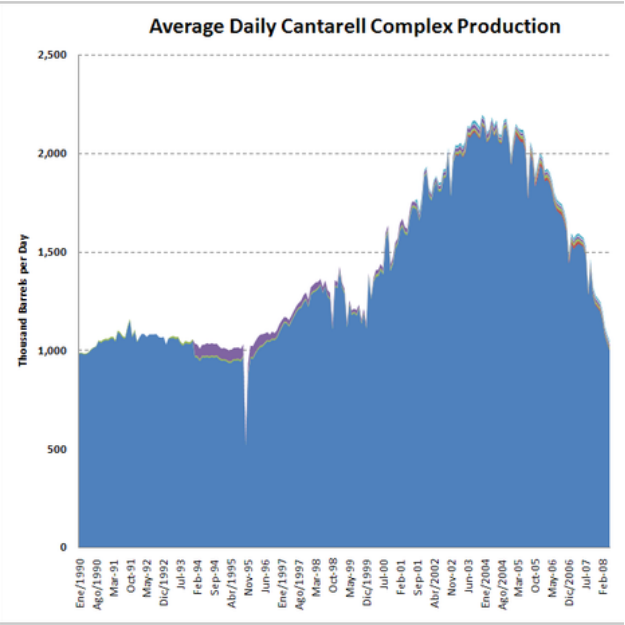
There is, however, a limit to how fast we can pull oil out of the ground. Peak Oil will occur when the world hits this peak in *production* - and this will likely happen soon!

Hubbert Peak

M. King Hubbert was the first geoscientist to look at the peak oil effect and predicted that oil field production would follow a bell-shaped curve. The peak of this curve is referred to as the Hubbert Peak. In 1956, he predicted that oil in the US would hit a peak in 1970, while this theory was widely ridiculed at the time, it came true. Since then, many other oil fields around the world have hit their peak and are currently in production decline.



Peak Example: Cantarell



No oil field follows the Hubbert curve exactly - each has a unique production signature.

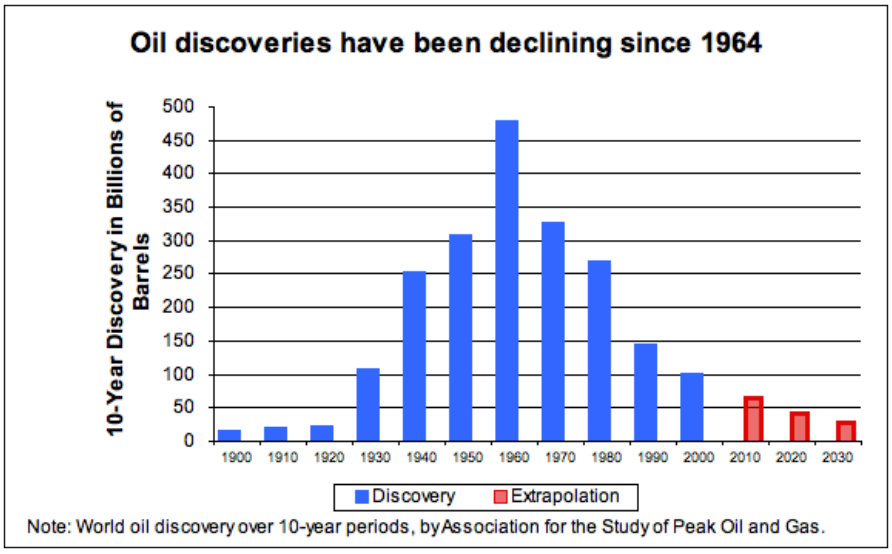
Production rates can be significantly increased with advanced extraction techniques like horizontal drilling, water injection and gas injection. However, these techniques don't change the total amount of oil recovered. Instead they speed up recovery rates and hence move the production peak to an earlier date.

A case in point is the Cantarell oil field in Mexico which was the 2nd highest producing oil field in the world in 2004. Drillers used nitrogen injection to advance extraction and therefore current production is in rapid decline. [1]

Discovery Peak

Peak oil *production* follows peak *discovery* of oil by roughly 30 to 40 years.

As an example, the oil in US lower 48 peaked in production 35 years after the discovery curve peaked [2]. Worldwide oil discoveries peaked in 1964 [3] which is another indicator that peak oil is close.



Production Plateau

Despite oil running to about $147 per barrel in 2008, oil production has been essentially flat since 2005. [4]

This flat line means that there is no excess oil production capacity anywhere in the world. It is a common misconception that some Middle Eastern countries could just "turn up a valve" to pump more oil, because if this was actually possible, they would have already increased

production when prices were high.

It is possible that oil production will go slightly higher as marginal oil fields, tar sands and bio-fuels become profitable. However, looking back years from now, we will likely see that 2005 was the start of the peak oil plateau.

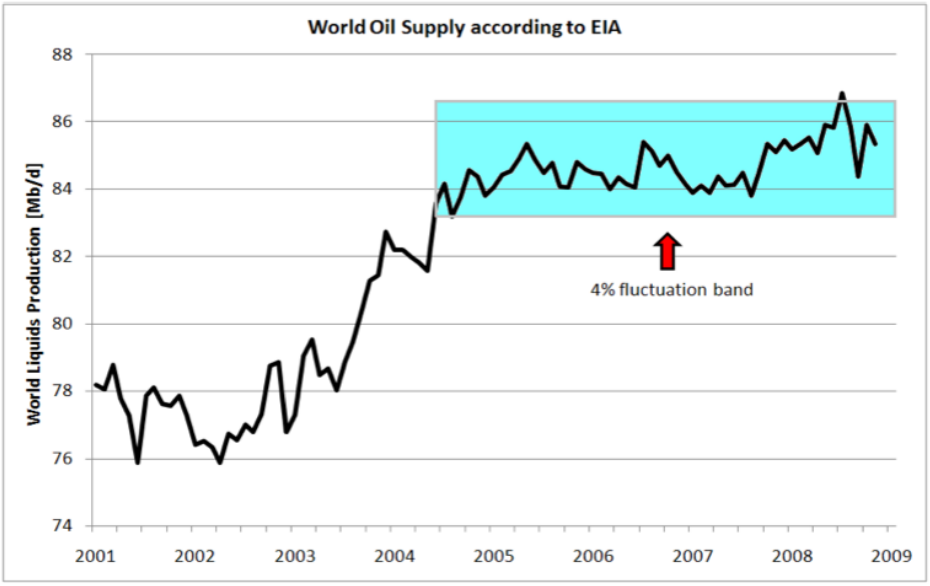
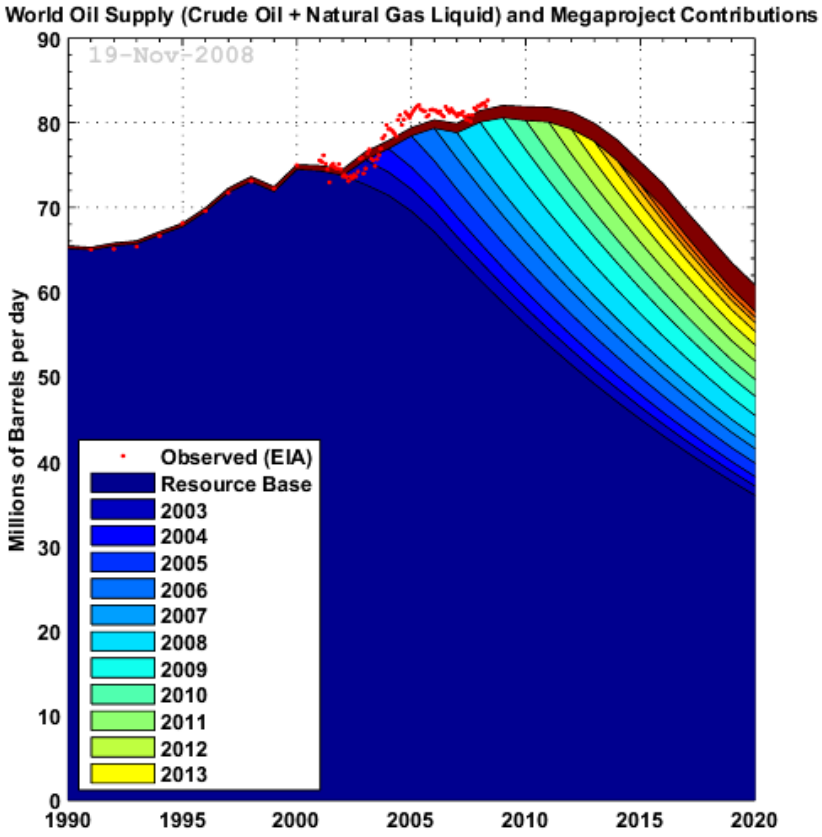


Figure 1: *World liquid fuels production from January 2001 to November 2008. Since mid-2004, production has stayed within a 4% fluctuation band, which indicates that new production has only been able to offset the decline in existing production. Source: IEA (2009)*

Forecast

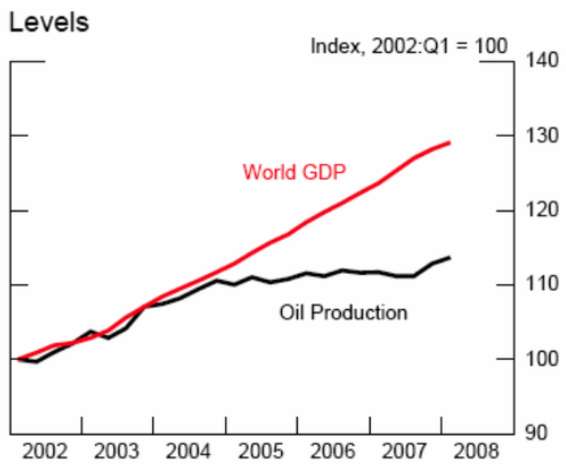
Of the 65 largest oil producing countries in the world, 54 are past their peak and are now in decline. [5]

Looking forward, most projections show a peak in the next few years. **The megaproject analysis below looks at the decline of existing oil fields and contributions from new mega-fields coming online and predicts a peak by 2012!** [6]



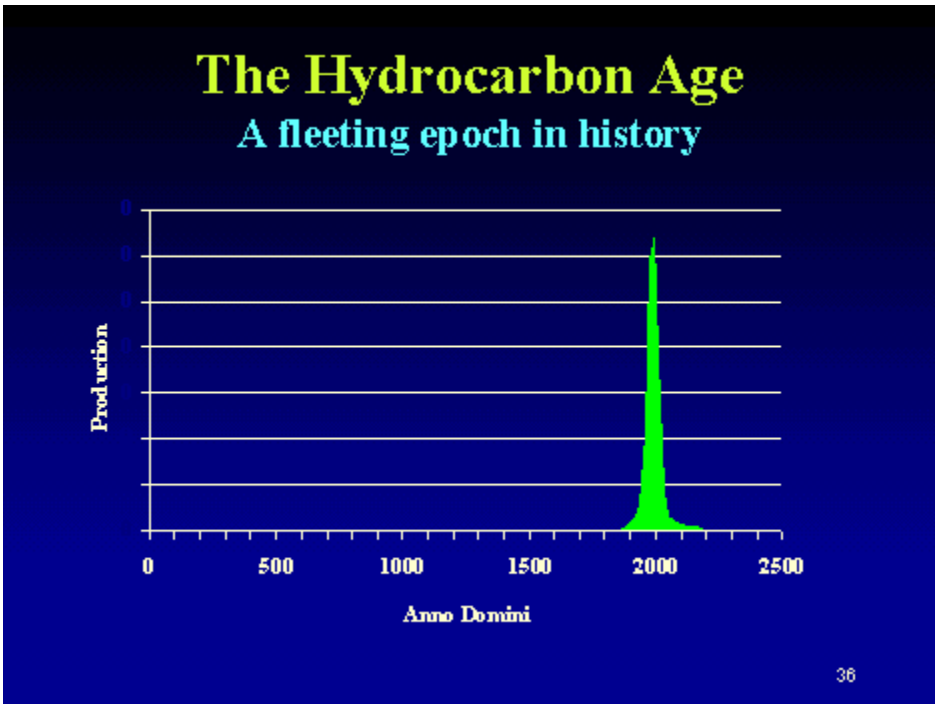
World GDP and Oil Production

A vivid illustration of peak oil is a plot the world gross domestic product (GDP) on the same graph as oil production. In this graph, it can be seen that GDP and oil production increased at about the same percentage rate from 2003 to 2005, but since 2005 GDP has continued to increase while oil production has been flat. [7] This gap between oil production and growth is a strong sign that peak oil is eminent.



Brief Hydrocarbon Age

Regardless of whether peak oil will occur in 2012 or 2030, we know that oil and other hydrocarbons won't last forever. Looking at it from a timescale of several thousand years, the hydrocarbon age will only occupy a small slice of time. [8] Therefore, the sooner we can start moving to renewable energy, the better!



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