

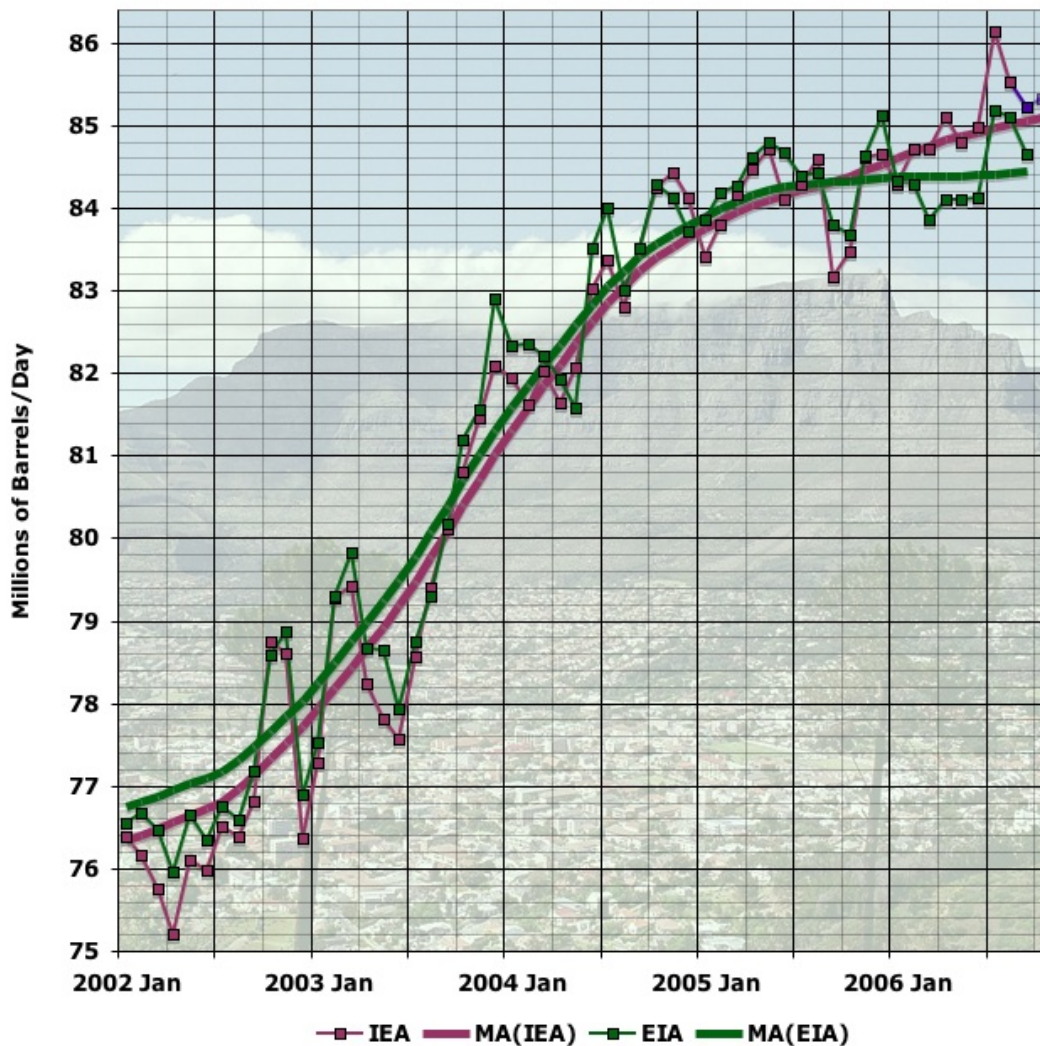


## Plateau update

Posted by [Stuart Staniford](#) on December 6, 2006 - 11:52am

Topic: [Supply/Production](#)

Tags: [peak oil](#), [plateau](#) [[list all tags](#)]



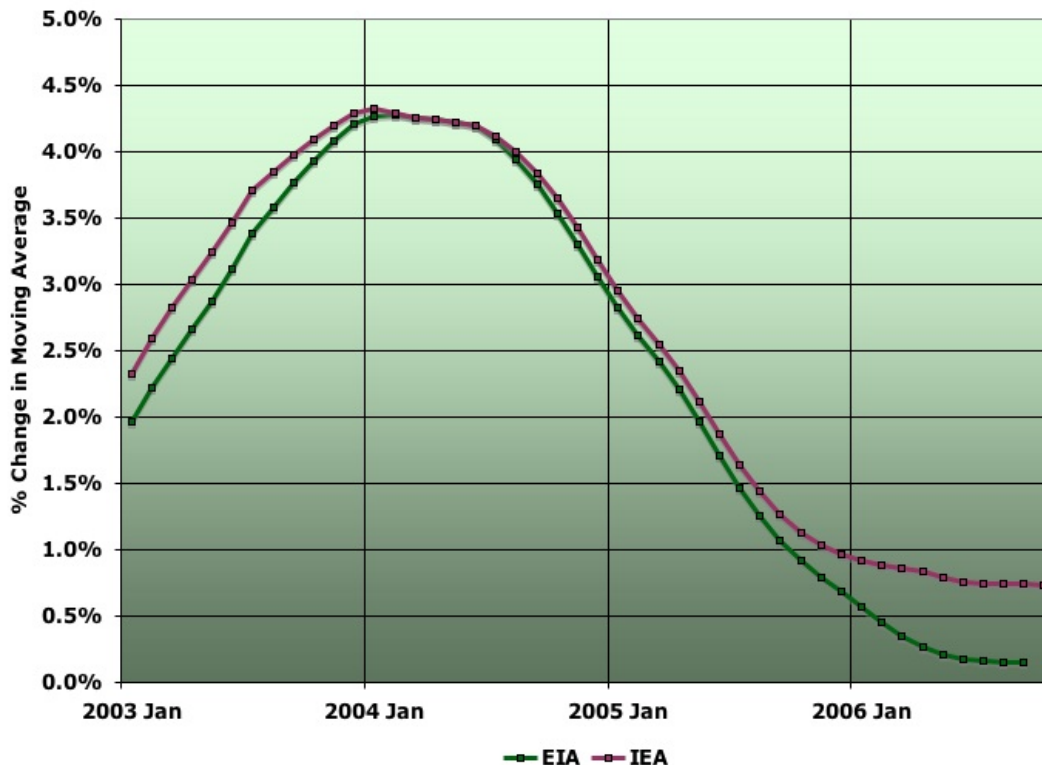
*Average daily oil production, by month, from EIA and IEA, together with 13 month centered moving averages of each line, recursed once. Click to enlarge. Believed to be all liquids. Graph is not zero-scaled. Source: [IEA Oil Market Reports](#), and [EIA International Petroleum Monthly Table 1.4](#). The IEA line is taken from Table 3 of the tables section at the back of the OMR in the last issue for which the number for that month is given; last two points in purple are at earlier stages of revision than the rest of the graph.*

Herewith a quick update on the supply situation. I briefly touched on recent declines in Saudi Arabian production [the other day](#). The global supply situation is as above. Essentially, the situation has not qualitatively changed since [I last discussed it](#). The two agencies I track (the US

[EIA](#) and the [OECD IEA](#)) are at increasing variance about what's going on, with the EIA seeing supply basically flat over time, while the IEA sees a very slow rise in available supply (with data through October). For more background on this plateau debate, see [this tutorial post](#). Presumably, this discrepancy will not continue too many more months, as it's going to get a little embarrassing.

At any rate, there's little doubt that the record month is now July 2006.

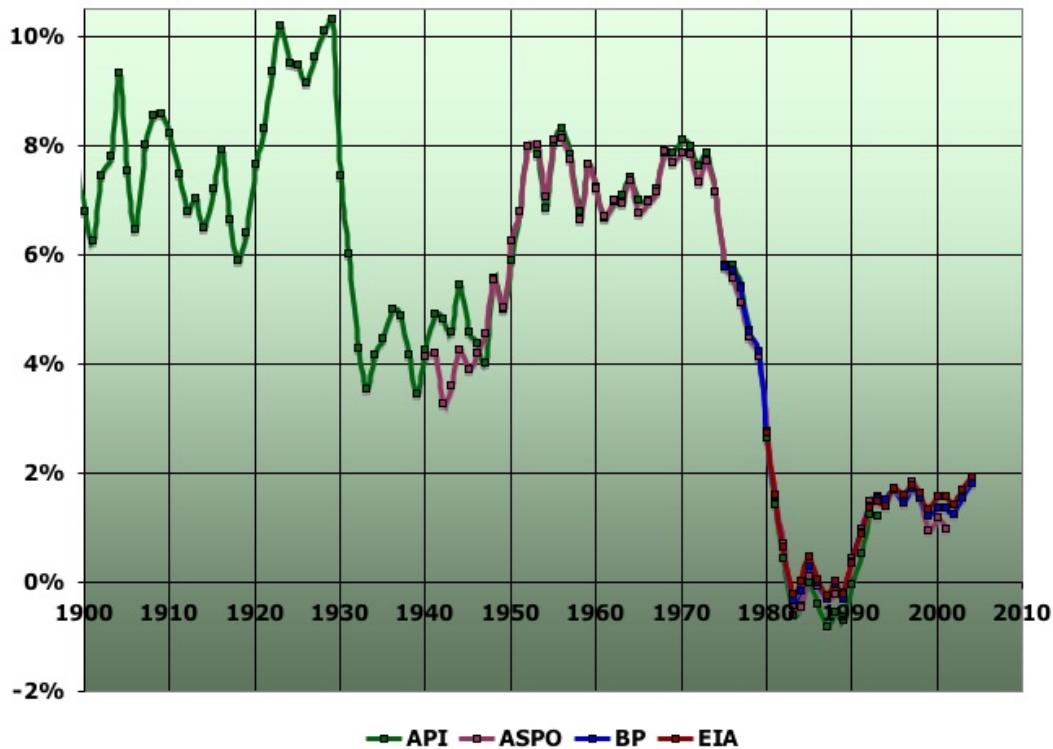
Expressed as growth rates, the difference between the two agencies is about half a percentage point. This next graph shows the year on year growth in the two moving average lines above (which themselves are thirteen month centered moving averages recurred once).



*Year-on-year growth in moving averages of EIA and IEA oil production estimates. Click to enlarge. Believed to be all liquids. Source: [IEA Oil Market Reports](#), and [EIA International Petroleum Monthly Table 1.4](#). The IEA line is taken from Table 3 of the tables section at the back of the OMR in the last issue for which the number for that month is given.*

As you can see, the EIA is seeing annual growth of 0.1% - essentially zero - while the IEA is seeing growth at around 0.7% annually. There are two points worth noting about this situation.

Firstly, if it were to continue, even the IEA's growth rate is very low by historical standards. This next graph shows growth rates in production for various data sources. The growth rate here is the average growth over the decade prior to the year in question (for the mathematically oriented, it's  $(P(n)/P(n-10))^{0.1} - 1$ ).



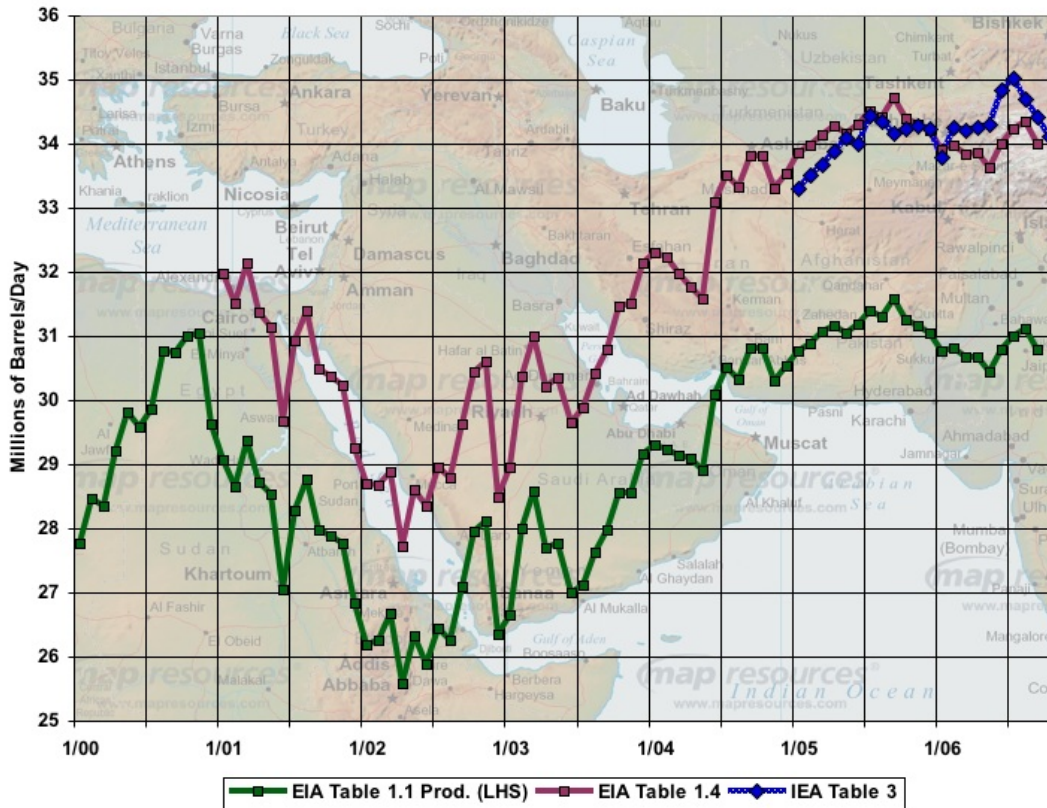
*Average annual growth rate over the prior decade in oil production from various estimates from 1900-2004.*

As you can see, in the heyday of world (and US) economic growth in the 1950s and 1960s, annual growth in oil usage ran around 7-8%. Then, following the 1970 peak in US oil production, came the 1970s oil shocks in which oil usage actually contracted. In the last couple of decades, economic growth has been slower, but steadier, and oil usage has been growing at around 1.5% a year. For reasons that aren't clear, both economic and oil usage growth [tends to come](#) in "eras" of relatively constant growth marked by sharp "paradigm shifts" between them.

So, if we are now in for an era of sustained zero or sub 1% growth in global production, that would be a new thing, and require more conservation on an ongoing basis. In particular, with growth in consumption in oil exporting countries and high growth Asian economies, it's likely US and European oil usage would need to contract slightly even if there is slight growth in overall production (a point discussed at greater length [here](#)).

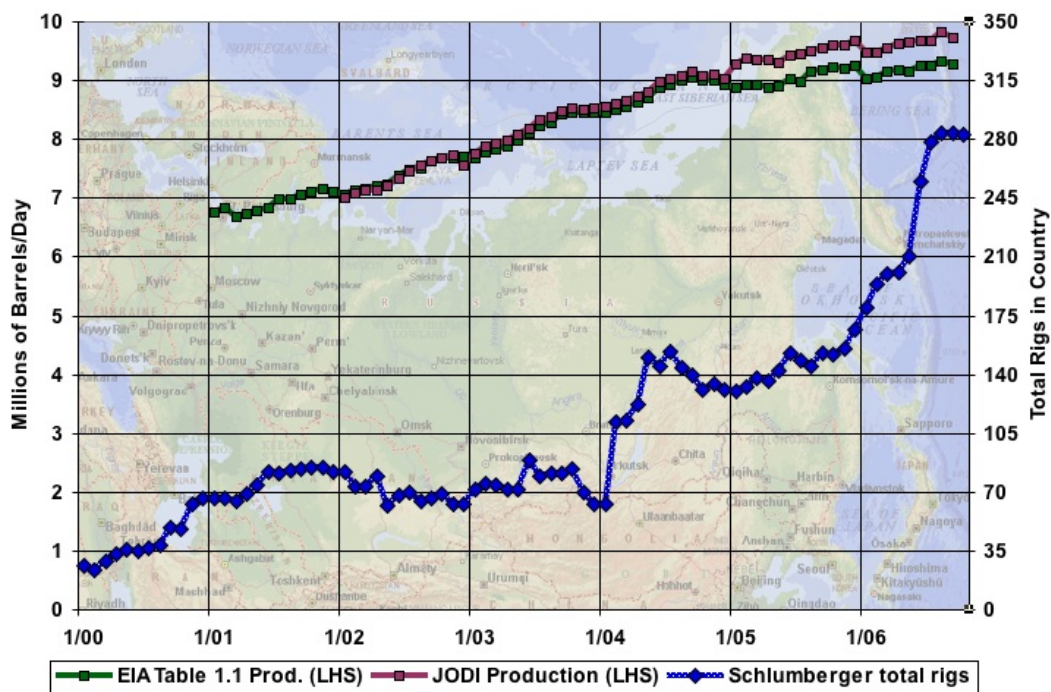
The other point, is that there's not likely to be too much "sustained" about growth when a huge fraction of production is coming from the Middle East, where the wheels seem to be coming off the truck. Hard to say whether a crisis will come this year, next year, or later, but the odds of, say, a decade of steady Middle Eastern oil production uninterrupted by major shocks seem discouraging at this point. For example, see [Andrew Sullivan](#) on the possibility of a major Shiite-Sunni regional war. Such a war would utterly transform the world economy in very short order and in a very brutal manner.

Let me put up two other graphs of interest. The first is OPEC, which in November [allegedly cut production](#). We'll have to await November/December statistics to see if that creates a noticeable step in the production history. However, here's the data available at present (which goes through September or October depending on source) and shows OPEC production already declining ahead of the planned cut).



Estimates of OPEC production by EIA (both with (Table 1.4) and without (Table 1.1) NGLS) and IEA. Click to enlarge. Believed to be all liquids. Graph is not zero scaled. Click to enlarge. Source: [IEA Oil Market Reports](#), and [EIA International Petroleum Monthly Table 1.1 and 1.4](#). The IEA line is taken from Table 3 of the tables section at the back of the OMR in the last issue for which the number for that month is given.

Finally, during 2001-2004, when global production increased healthily, the bulk of that increase came from Saudi Arabia and Russia. With Saudi production declining, at least for the last year, Russia becomes of particular interest. Here's the latest picture:



*Estimates of Russian production by EIA and JODI (Joint Oil Data Initiative) on the left scale, and total drilling rigs in country on the right scale. Click to enlarge. Source: [JODI](#), and [EIA International Petroleum Monthly Table 1.1](#). Rig data is from [Schlumberger](#), and includes rigs drilling for both oil and natural gas.*

As you can see, the Russian revival has not peaked out yet, though it has slowed to only around 1/2 mbpd in additional production each year over the last two years (about half the pace of production increases in the early part of the decade).

Again, see [here](#), for more background on these plateau posts if you haven't been following them.



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