

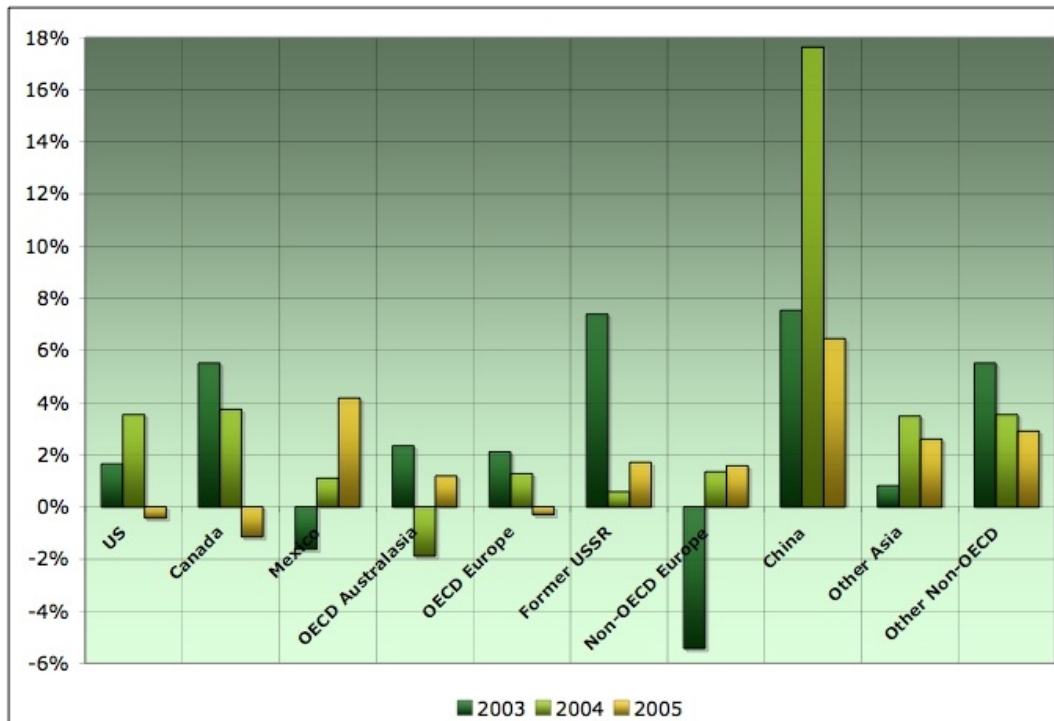


Who has to conserve how much?

Posted by [Stuart Staniford](#) on May 6, 2006 - 12:46am

Topic: [Economics/Finance](#)

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



Percentage change in oil consumption over prior year, for various countries and grouping of countries. Click to enlarge. Believed to be all liquids. Source: [Table 2.4 of EIA International Petroleum Monthly](#).

In influential posts over at [Graphology](#), Khebab and WesTexas argued that the four largest oil exporters were [more than half way through](#) their eventual production, and that since their [internal consumption was bound to increase](#), therefore the amount of oil available for export was certain to plummet. WesTexas has been making increasingly dire warnings about lack of export capacity ever since.

I don't 100% agree with this way of looking at things, though it's a piece of the truth. The part I agree with is that net oil exporters are going to have their economies helped by high oil prices, and that might lead to some increase (or at least reduced decrease) in oil usage relative to everyone else. However, I think just assuming that consumption in exporting countries will increase in line with their historical GDP growth or population growth, and only what is left over after internal consumption gets exported, strikes me as probably a bit simplistic.

I think firstly we can divide oil exporters into two groups. In countries like Norway and Canada, oil is not internally

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subsidized, and consumers will face the same price incentives as consumers elsewhere. High gasoline prices will have Canadians and Norwegians conserving just like Americans or Germans. In countries like Kuwait or Venezuela, internal oil usage is heavily subsidized. However, even here I expect economics will have some potent effects. The more the differential between the internal price and the external price, the more powerful will be the incentives to find a way to export more and consume less internally. This will lead to political pressure from the national oil companies, and their political patrons, to export more. If that doesn't work, it will lead to corruption and smuggling of oil. The oil will start to leak out of those exporting countries one way or another. I think these economic effects will tend to limit, though not eliminate, the degree to which exporting country consumers will feel able to increase their consumption while the rest of the world is being forced to conserve like crazy. The graphic at right shows some prices from last year to illustrate the variety of price incentives consumers face.

The more natural way to think about the situation to me is to consider what has happened in the last year or so, and assume that the future will be like the past, only a little less so when it comes to oil consumption. That is, countries that were able to sustain a high growth in their oil usage from 2004 to 2005, will probably have some oil usage growth from 2005 to 2006 also, though perhaps not quite as much. Whereas countries that were obliged to reduce usage in 2005 over 2004 will probably have to reduce even a little more in 2006.

To look at that data, the ideal source will be the new version of the BP report, but that's not out yet. In lieu of that, the EIA has Table 2.4 in the [International Petroleum Monthly](#). It has consumption data, but unfortunately doesn't break out all countries, just some of them. However, I still think this is more useful than considering BP data only through 2004 (when the plateau hadn't really started to bite).

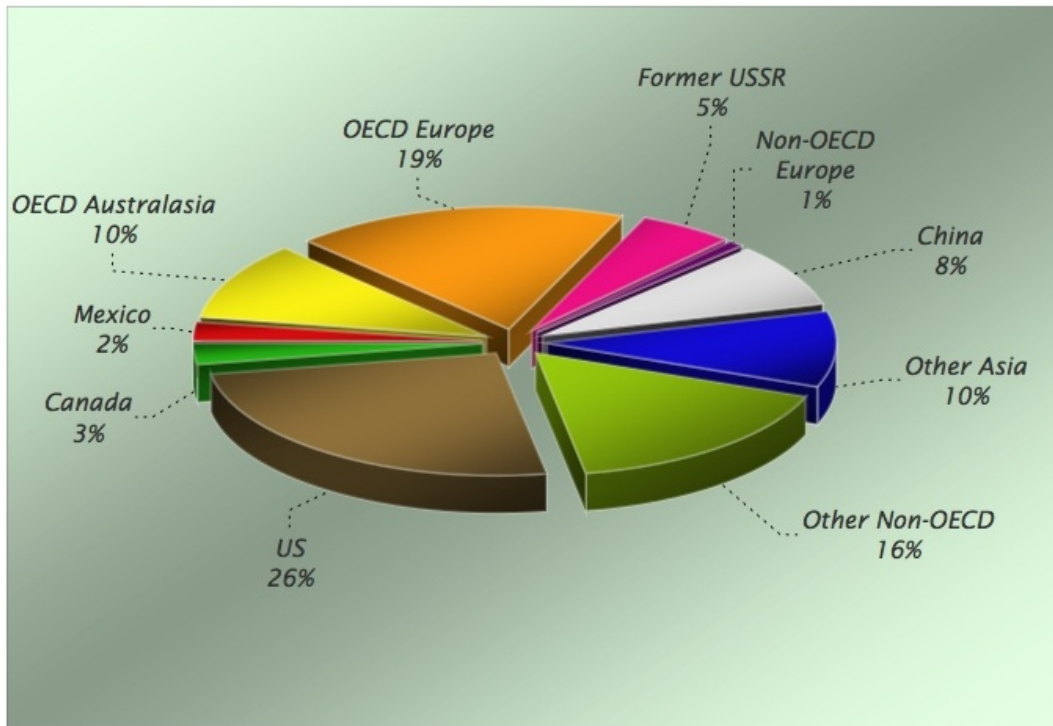
Anyway, I took the following countries and groupings: here is their share of 2005 oil usage.

PRICES AT THE PUMP

Gas prices within the U.S. may have hit their seventh consecutive record Friday, but American drivers are still paying a lot less than other motorists around the world.

CITY, COUNTRY	PRICE PER GALLON (REGULAR)	EFFECTIVE DATE
Amsterdam, Netherlands	\$6.21	May 2005
Stockholm, Sweden	\$5.74	May 2005
Paris, France	\$5.43	May 2005
Zagreb, Croatia	\$4.80	May 2005
Tokyo, Japan	\$4.61	May 2005
Sofia, Bulgaria	\$3.55	May 2005
Havana, Cuba	\$3.03	Feb. 2005
U.S. average urban price	\$2.30	Aug. 2005
Moscow, Russia	\$1.95	May 2005
Kuwait City, Kuwait	\$0.68	Aug. 2005
Cairo, Egypt	\$0.59	Aug. 2005
Caracas, Venezuela	\$0.12	Aug. 2005

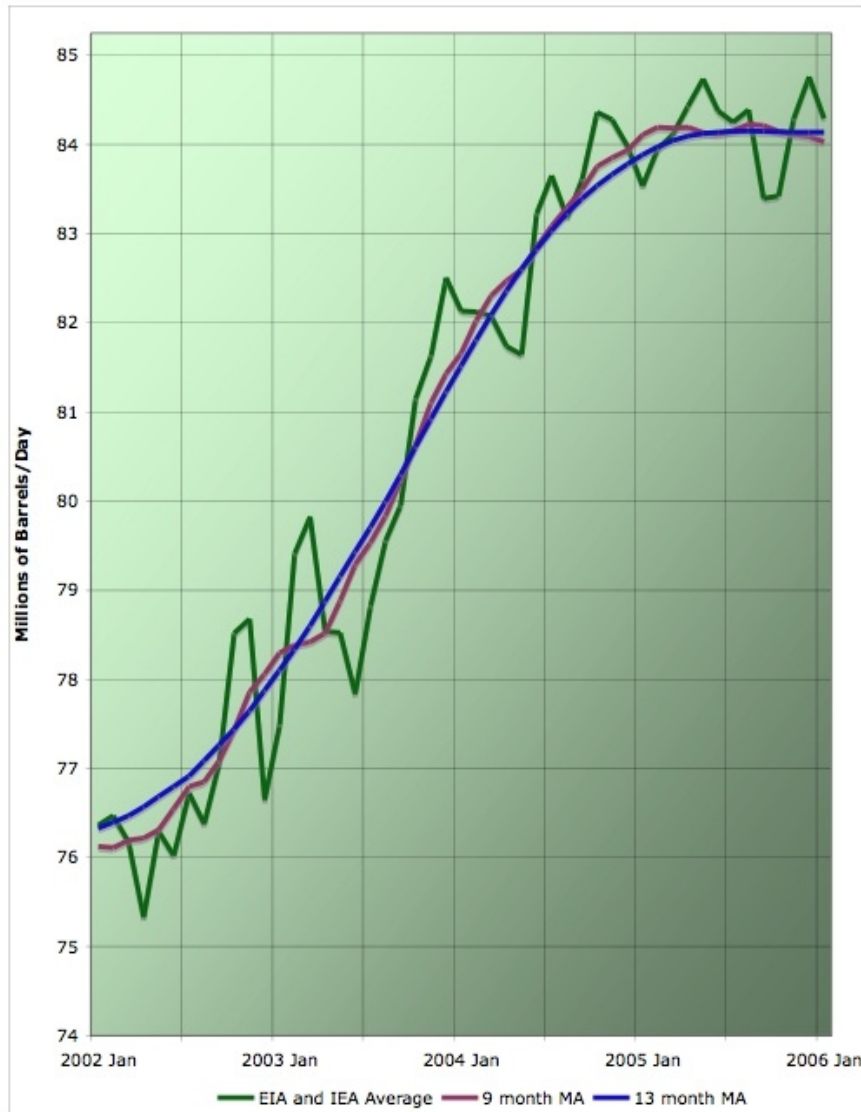
SOURCE: ARINC



Allocation of 2005 oil consumption to various countries and grouping of countries in this piece. Click to enlarge. Believed to be all liquids. Source: [Table 2.4 of EIA International Petroleum Monthly](#).

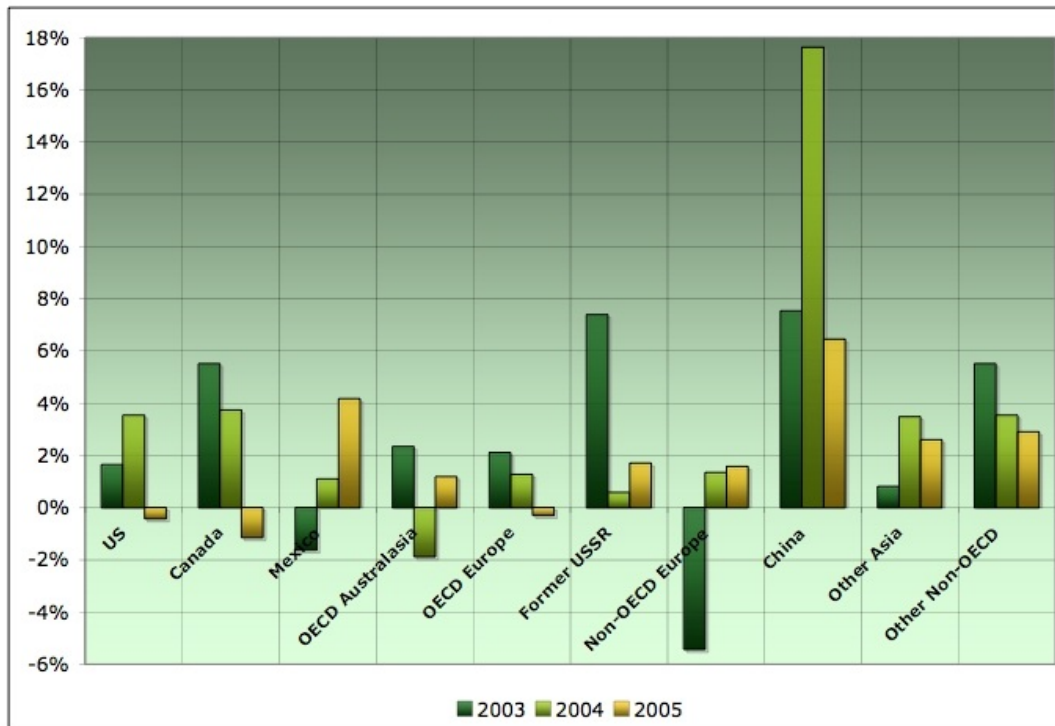
Besides the named countries, "OECD Europe" is Britain, France, Germany, and other OECD countries in Western Europe. "OECD Australasia" is Japan, Korea, Australia, and New Zealand. "Other Asia" runs the gamut from rapidly industrializing countries like India and Thailand to less economically successful countries like Bangladesh and Myanmar. "Other Non-OECD" includes both almost all the OPEC countries, and also a mix of developing countries from Africa and Latin America. Obviously, this is far from the ideal way to group the countries for this purpose, but it's the best I could make of the data available.

Let's remind ourselves of what the global production curve in the last few years looks like:



Average daily oil production, by month, EIA and IEA (corrected) estimate averaged. Also a nine month centered moving average of the monthly series. Click to enlarge. Believed to be all liquids from January 2002 through January 2006. Graph is not zero-scaled. Source: [IEA](#), and [EIA](#).

So from 2002 to 2003, global production increased very healthily. It started to slow down in 2004, and the brakes really came on hard in 2005. So now let's look at who got to increase/decrease their oil usage by how much as we came into the plateau. This graph shows percentage increase/decrease in usage over the prior year for 2003, 2004, and 2005.



Percentage change in oil consumption over prior year, for various countries and grouping of countries. Click to enlarge. Believed to be all liquids. Source: [Table 2.4 of EIA International Petroleum Monthly](#).

Look particularly closely at the yellow bars, which represents the 2004->2005 transition as production plateaued out. You can see pretty clearly who had to do the conserving: the US, Europe, and Canada. *I.e.* Western economies with modest growth and non-subsidized domestic use of oil. The more car-intensive US and Canada had to conserve a shade more than Europe on a percentage basis.

China, and to a lesser extent the rest of Asia, continued to grow oil usage, though less than in 2004. Meanwhile, oil exporters like Mexico and the USSR increased oil consumption growth slightly from 2004 to 2005. Obviously the "Other Non-OECD" grouping hides a mixture of oil exporters who are probably growing consumption for the most part and oil-consuming developing countries who are probably having to conserve. But on average, that group increased its oil consumption into 2005.

My guess, again, is that this will set the pattern for 2006 and 2007. Europe and North America are going to have to tighten their belts further still, and Asia and the oil exporting countries are going to continue to grow their usage. In the Asian case it will be less than they otherwise might have, and in the case of OPEC countries, it will be more than they otherwise might have.

But absent major oil shocks, the conservation required in the next few years should be relatively modest and manageable percentages. Of course, the risk of major oil shocks seems to get worse by the day, so who really knows?



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