



The Relationship Between a Country's Income and Energy Consumption per Capita

Posted by [Prof. Goose](#) on July 13, 2005 - 6:32am

Looking at all of the predictions for those who say the peak is coming in 2025 or 2050 as if they are 2005 (which I think many here would agree we are at or close to) adds a certain, um, something to our current understanding...so, let's take for example, [this piece from Klaus Picard at Deutsche Shell \(.pdf\)](#) (also on [hydrogenperspectives.com](#) as well).

This is a glossy presentation that is very pro-hydrogen fuel cell, and thus it paints an interesting and rather gloomy picture of the coming energy situation that's worth looking at with the above caveat in mind.

The first thing that got my attention is this picture.

[GDPvGJ](#)



The caption for this picture reads:

Per capita primary energy consumption grows with income in a similar pattern across countries and time. Around \$15k per capita (1997\$) the relationship shifts as less energy-intensive services dominate economic growth. There are signs of saturation beyond \$25k and evidence that later developers require less energy.

One of the main notions in peak oil blogistan is that global energy demand has been continually growing in the last century as the energy is essential for economic development and rising living

The picture illustrates a strong relationship between income and energy demand through a plot of the relationship between per capita primary energy consumption versus income across countries and time. It shows that per capita primary energy consumption grows with income in a similar pattern across countries and time and it is clear that in a longer term the energy demand will increase further.

To me, this really shows how far the US has to fall as "king of the mountain." We're a rich country that uses a lot of energy per person...and as energy becomes more and more expensive, the rest of the world will look at stats like these and say, "hey US, you're going to have to take it down a notch or ten." Just one more reason that they're going to hate us more and more as oil gets more and more expensive.

This is the world that a shrinking supply of oil is going to lead us towards, it seems to me.

The problem is that we are in the mindset that everything, including economies, will keep growing. However, it is ONLY BECAUSE OF CHEAP OIL/ENERGY that economies have continually grown. After watching Jared Diamond last night, this becomes even more abundantly clear...it sounds deterministic that geography facilitated societal development, yes...but oil is part of that geographic catalyst. The US, because of its agricultural and natural resource wealth, has had the riches to pay for the oil...at least up until now.

It also seems that, when you take cheap oil out of the equation, and many economic assumptions would seem to no longer hold. We've had 100 years of constant growth facilitated by cheap oil. If peak oil is now, with nothing ready to replace the energy margin, the implications are ugly.

(There's also a few other illustrations in the piece worth looking at, but I'll leave those for you all to take a peek at yourselves.)

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