

How bad is Peak Oil Really? Would the biosphere care?

Contributed by Jon Rynn

(Editors Note: Here Jon Rynn takes a look at the transition of society to one which potentially has no liquid fuel, and its effect on the planet. He is a regular contributor to Grist.org (see below), where this article first appeared in August 2007).

Recently we've had a couple of discussions here at Gristmill concerning various aspects of peak oil; that is, the assertion that very soon (if it hasn't happened already) the global supply of oil will peak, and even though demand is going up, supply will start to come down, so prices will skyrocket.

It seems to me that some of the contention in these discussions boils down to the question: would it really be so bad if the oil started running out? After all, we would stop mucking up the planet with the pollution, carbon emissions, and infrastructural damage we have been inflicting for these hundred-years-plus of the petroleum age.

Wouldn't it force humanity to live within our means if gasoline was \$10 or even \$20 dollars per gallon, as it will eventually be?

As it so happens, I've recently been investigating the question of what kind of civilization we would need to have if we wanted to live without fossil fuels, and I wanted to know how we are currently using oil in order to understand how to live without it.

Using government data detailing the use of oil, in dollars, the conclusion I came to was this: over 90 percent of petroleum in the U.S. is burned by internal combustion engines. So the question needs to be reframed: would it really matter if we couldn't use internal combustion engines?

The answer, in the long run, is that it would be much better if we didn't use internal combustion engines. But that leads to another question: How do we get from here to there, and how will that transition affect the planet?

There are two major groups of problems stalking the biosphere: the first is global warming, the second is a set of problems that I will refer to as "ecosystem destruction," that is, the destruction of forest, ocean, freshwater, grassland, arctic, and cropland ecosystems. Either of these problems will lead to something close to a Desert Earth.

The problem of peak oil for the biosphere is that the current global civilization will become so hysterical and single-minded about keeping the oil or oil substitutes flowing that it will greatly exacerbate both global warming and ecosystem destruction. There are three main sets of problems to which peak oil could lead:

First is the problem of biofuels. Let us assume, for the sake of argument, that a small amount of biofuels could be grown sustainably -- that is, without ecosystem damage. This would probably account for about 10 percent of our petroleum use, roughly the amount used for feedstocks for chemicals and other nonengine activity.

That means that in a vain attempt to keep engines running, vast areas of cropland, grassland, and forest would be turned to growing biofuels unsustainably, destroying not only the replaced ecosystems but also, eventually, even the biofuel plantations. In addition, as poor countries get priced out of the oil market, they may turn to their own ecosystems for sources of energy.

Second, we have the spectre of converting coal to liquid fuel, which will double the carbon emissions of conventional oil. We can also include in this category things like the oil sands of Alberta, Venezuela, and the western United States, which besides being horribly destructive ecologically will throw huge amounts of pollutants and carbon into the atmosphere. James Hansen, the NASA climate scientist, has stated that we could prevent much of the ill effects of global warming by using even the rest of the available easy-to-reach petroleum, as long as we didn't use most of the available coal, and if we didn't use these other "unconventional" sources of petroleum.

Third, and most unpredictable, we don't know what will happen as oil becomes much more expensive. In particular, there could be a series of very ugly wars (what wars aren't ugly?); we may be seeing the first phase of this in Iraq. Aside from the horrible human toll, the ecosystem and atmospheric damage is bound to be high. This, I think, is the main point Michael T. Klare has been trying to make in his recent discussion of the effects of peak oil.

In addition, we don't know the exact effects of peak oil on the world economy, but because the U.S. is so dependent on oil for transportation, the consequences for the average American are bound to be severe. Besides the pain and suffering, I fear for the consequences such stress will put on our democracy, as the anger that may attend choosing between getting to work and eating will be fertile soil for demagogues of various sorts.

All of these problems are avoidable, I believe, but prevention requires time. Fortunately, I suppose one could say, the concern over global warming has spurred a wide-ranging discussion of how to change society in order to use less fossil

fuels. But as Dylan said: "All along the watchtower," the "hour is getting late." There must be some kinda way outta here. But what is it?

Since so much oil use has to do with transportation -- about 70 percent in the U.S., according to my research -- it would seem prudent to aggressively plan for and advocate policies encouraging plug-in hybrid vehicles, if not all-electric vehicles, on the one hand, and to do the same for a comprehensive system of electrified mass transit on the other (including high-speed rail and light rail).

What makes this most difficult is that there needs to be a "third" hand -- increased density and mixed use of residences, shopping, services, and working, so that less transport is needed in the first place. That is more difficult because it involves building new buildings or retrofitting old ones and reinventing the use of space in cities, towns, and suburbs -- and it may involve some radical changes to suburbs.

Then there are the other uses of petroleum, perhaps most critically in agriculture, which could involve a wholesale change from industrial agriculture to localized, more labor-and-knowledge intensive organic forms of agriculture.

So, how should my peak oil questions be answered? Of course it would be better for the environment if we weren't burning petroleum. I'm not sure many people would miss the internal combustion engine (by the way, a horribly inefficient mechanism, made possible only because of our use of oil).

The big question remains, how do we move from one sort of society to another? Will we tear up the rest of the earth's ecosystems in the process? Will we emit even more carbon dioxide? Will we wind up killing each other over what's left?

Or, will we build on the work being done by global warming activists, mapping out and envisioning a new society not based on liquid fuels?

© Jon Rynn 2007 Jon Rynn is a regular contributor to the blog at [Grist.org](http://grist.org), attempting to present and discuss holistic solutions to problems such as global warming, peak oil, mass extinction, and globalization. He has a Ph.D. in political science and has written for *Foreign Policy in Focus* and CitiesGoGreen.com. He can be contacted at jonrynn@gmail.com

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