

## **The Likely Impact of Global Oil Peak on the United States**

*Richard Heinberg*

New College of California, Santa Rosa CA, USA

rheinberg@igc.org

Throughout most of the late 19<sup>th</sup> and early 20<sup>th</sup> centuries the US was the world's foremost oil producing and exporting nation; it was also the first important producing nation to pass its all-time oil production peak, which occurred in 1971. Thus America is emblematic for understanding world oil history and the approaching global extraction peak.

While each nation will be impacted differently by global oil peak, the types of effects that are likely to be seen in the US can be extrapolated elsewhere; however, effects in this instance will be more pronounced because of America's extreme and arguably unmatched economic dependence on petroleum.

America's original endowment of oil is estimated at somewhat less than 200 billion barrels, of which 170 billion (or about 90 percent) has been extracted (ASPO, 2002). Current production of conventional oil, including offshore areas and Alaska, is about 5.5 million barrels per day; non-conventional sources yield a little more than 2 million barrels per day. Present US consumption stands at 20 million barrels per day; imports account for nearly 60% of usage. (EIA, 2005) The US has the highest per-capita consumption of oil of any large country, and is the world's foremost oil user and importer. Well over 97% of US transportation energy comes from petroleum, and Americans are the most mobile people on the planet: there are more autos in the country than there are licensed drivers—about 210 million total. Americans drive an average of 12,000 miles yearly at an average fuel efficiency of 20.8 miles per gallon (3.2 kilometers per liter) (EPA, 2005).

Petroleum dependency has been systematically encouraged through suburban design and the lack of public transportation alternatives to the private automobile. The peak of per capita public transportation usage occurred in the 1940s; following this, the nation invested hundreds of billions of dollars in its Interstate Highway System, effectively a subsidy to the auto and oil companies; simultaneously, it invested heavily in civilian air transport while systematically dismantling its interurban rail and urban light rail systems.

The US was also the center of modern agricultural developments—the widespread deployment of petrochemical fertilizers, pesticides, herbicides, and powered farm machinery—that have made the nation's food system overwhelmingly oil-dependent.

Oil currently accounts for 40 percent of total US energy usage, making it the nation's primary energy source. Domestic production of natural gas, the nation's second most important energy source, is also in decline. The US has large domestic coal reserves; however quality is highly variable and a recent Hubbert curve analysis suggests a domestic production peak in as few as 20 years (Vaux, 2004). The nation derives 8 percent of its energy from nuclear power; that amount could be increased substantially, but the cost would be enormous and the development time would be considerable. Only 6 percent of US energy production is from renewable sources, most of that being hydroelectricity and the burning of biomass, with solar, wind, tidal, and wave energy combined contributing less than one quarter of one percent.

All of this is well known. What is less often discussed is the challenge that will be presented by global oil peak.

The US was able to make up for its domestic oil peak by means of four primary strategies:

- Importing more oil from other nations,
- Relying on the US dollar denomination of global oil sales to bolster the value of the dollar and therefore to make imports artificially cheap,
- Using military power to defend access to oil-producing regions and to enforce stability in those regions,
- Partial efforts to increase energy efficiency.

When global oil production peaks some of these strategies will likely begin to fail.

Imports will become more expensive, in both absolute and relative terms. Of course, prices for oil itself will be much higher, but so will prices for nearly everything else (due to rising energy costs for manufacturing and transportation); thus consumer purchasing power will be strained, making higher fuel costs harder to absorb. At the same time, the continuing declining relative value of the dollar measured against other currencies will add to the real cost of fuel.

The prevalent denomination of oil sales in US dollars may cease, due to the dollar's declining value, which is due to bloated US trade deficits, which are themselves at least partly attributable to the high rate of US oil imports. If oil does come to be sold more frequently for other currencies, this will merely add to the downward pressure on the dollar's value, creating a reinforcing feedback loop.

America's military strategy in Iraq—which appears to be part of a larger design to dominate oil-producing regions globally—is already significantly challenged by armed resistance in that country. Attempts by the US to pursue a similar military strategy in other countries are likely to be resisted not only by the people of those countries but also by other nations averse to the notion of a unipolar world. China, Russia, India, Venezuela, and Iran appear to be engaging in economic and in some cases military alliances in an effort to counterbalance US hegemony in the Middle East, Central Asia, and Latin America, with the future of Africa also in dispute.

Meanwhile the consequences of America's lack of vigor and thoroughness in pursuing energy efficiency and conservation domestically over the past two decades will hamper its ability to adapt to a low-energy future. Already Germany, Spain, Netherlands, and Japan have leapt far ahead of the US in per-capita production of solar and wind power. The US may find itself needing to invest heavily in new energy infrastructure at a time when its economy will be hard pressed to maintain emergency services for its increasingly unemployed and desperate population. The nation's relative success in its energy transition will thus hinge on whether the global peak occurs sooner (2005) or later (the extremely unlikely date of 2020), and whether leaders accept the energy transition as their immediate top priority and make maximum use of whatever time is left, or continue to postpone the effort (Hirsch et al., 2005).

In the more likely case that peak occurs soon and few efforts at transition are made prior to the event, there will be profound economic impacts (Hirsch et al., 2005). Within years, the average American will have less opportunity, purchasing power, and mobility.

Food will cost more and consumer choices will be severely constrained. Life expectancy may decline markedly, and America's cities will likely fall into decay.

While US policy makers have squandered opportunities to avert such scenarios, even after the peak they will still face important choices, and their decisions will continue to be fateful both for US citizens and for the rest of the world.

With regard to foreign policy, decision makers must choose whether to seek military solutions to what is essentially an economic problem. If they pursue militarism, this could set loose a chain of violence throughout western Asia, Africa, and South America. The ultimate consequences are frightening to contemplate.

With regard to domestic policy, decision makers must choose whether and how to intervene in the economy. Economic contraction will occur, whether planned and coordinated or forced and improvised. If the government takes a hands-off approach, the suffering of the citizenry will be acute and will eventually lead to organized protests on a massive scale. Yet if the government chooses active strategies—rationing, creating employment in the agricultural sector, subsidizing alternatives, and mandating radical conservation measures—its efforts will still be subject to harsh criticism. Hence in either case it is likely that decision makers will respond by curtailing civil rights and expanding police powers

If the 20<sup>th</sup> century saw America's economic and geopolitical ascendancy, the 21<sup>st</sup> will almost certainly see its decline. The problems created for the US by peak oil will no doubt eventually be solved; however, the process will entail profound changes at every level of American society.

Sources:

ASPO Newsletter #23, November 2002,

[www.asponews.org/ASPO.newsletter.023.php](http://www.asponews.org/ASPO.newsletter.023.php)

EIA (Energy Information Administration) web site, [www.eia.doe.gov/](http://www.eia.doe.gov/)

EPA (Environmental Protection Agency) web site, [www.epa.gov/otaq/trends.htm](http://www.epa.gov/otaq/trends.htm)

Hirsch, Robert L., et al., "Peaking of World Oil Production: Impacts, Mitigation, & Risk Management" (SAIC, March 2005), [www.energybulletin.net/4789.html](http://www.energybulletin.net/4789.html)

Vaux, Gregson, "The Peak in US Coal Production" (FTW, 2004),

[www.fromthewilderness.com/free/ww3/052504\\_coal\\_peak.html](http://www.fromthewilderness.com/free/ww3/052504_coal_peak.html)