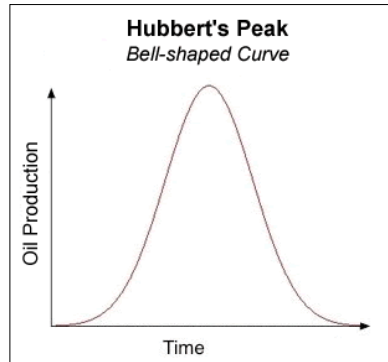


Our Post-Peak Oil Future

A Comparison of Two Scenarios Following the Global Peak in Oil Production

Modern society is tied to petroleum more than any source of energy and materials. Peak global extraction of oil means ever diminishing supplies – with no alternative source or combination of sources capable of replacing oil at anywhere near the same net-energy balance, flow rate, or volume.

In the 1950s the well known U.S. geologist M. King Hubbert noted that oil discoveries graphed over time tended to follow a bell-shaped curve. He supposed that the rate of oil production would follow a similar curve, now known as the “Hubbert Curve” (see figure above). Despite widespread criticism at the time,



Hubbert successfully predicted that the continental United States would peak in oil production in the early 1970s – a daunting reality that has made the U.S. economy increasingly reliant on oil imports to meet growing domestic demand.

Despite growing agreement that Hubbert's general theory is sound, considerable debate remains as to how the inevitable decline in oil supplies will play out, and what the implications will be for society at large. In this appendix, we've outlined two contrasting theories: (1.) author John Michael Greer's "Catabolic Collapse" theory, which predicts that energy descent will follow a stair-step pattern of overall decline, punctuated by brief periods of economic recovery; and (2.) oil analyst Jan Lundberg's "petrocollapse" theory, which postulates a steep, cliff-like drop-off in oil production, with dramatic consequences for our economy.

Catabolic Collapse: Stair-step Decline

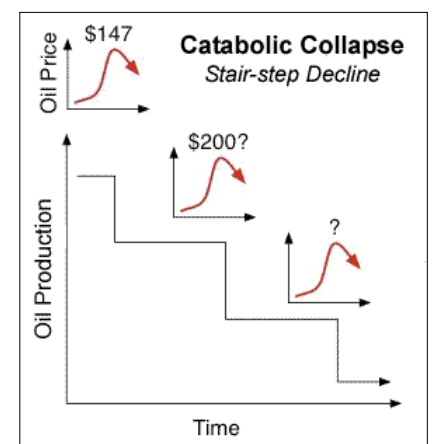
Excerpted from Frank Kaminski's review of John Michael Greer's *The Long Descent*

In his book, *The Long Descent*, John Michael Greer foresees a period of glacial deindustrialization driven by a process that he refers to as "catabolic collapse." Greer begins with a bit of background on peak oil, the Club of Rome's *The Limits to Growth* study, some lessons from past societal collapses and the difference between problems (which are solvable) and predicaments (which aren't). He makes a strong case for peak oil being a predicament rather than a problem.

Drawing on the theory of catabolic collapse, Greer outlines in detail how our predicament is likely to play out during the decades and centuries ahead. His theory shows how civilizations headed for collapse tend to decline in a gradual, downward stair-step of repeated crises and recoveries. They don't undergo the sudden, catastrophic free fall envisioned by diehard peak oil doomers.

How will our own society's catabolic collapse proceed? Greer sees us on the verge of a couple of decades of economic contraction, chronic energy shortages, declining public health, political turmoil and vanishing knowledge and cultural heritage. This crisis period, he predicts, will be followed by a respite of perhaps 25 years or so, during which industrial civilization's newfound relief from the lavish energy demands of universal motoring and electrification,

climate-controlled buildings, modern medicine and other present-day amenities will buy it a little breathing room. But this respite will, in turn, be followed by another round of crises that will rid our civilization of further layers of social complexity, and so on.



Eventually, the developed world will assume an agrarian lifestyle built around local communities and sustainable resources. But this change will happen so slowly that no one alive today will be around to witness the end result. Thus, Greer maintains, our energies should be focused not on surviving the end of industrial civilization, but on making it through the imminent crisis period that will be but one brief interval within that larger context.

To this end, Greer lays out some strategies and technologies for weathering the coming decades of crisis. The appropriate response to the challenges we face, Greer believes, is not to set up survivalist enclaves or lifeboat communities, but to reshape our existing

cities, towns and rural neighborhoods in order to better meet those challenges.

On an individual level, everyone needs to sharply curtail energy usage and find low-tech ways of doing things, in order to prepare for the inevitable shortages. We also need to position ourselves into occupational niches that meet actual human needs, since these are the jobs that are likely to stay in demand. In the face of declining public health, each person should learn to take charge of his or her own health. Lastly, we must help foster local community networking, which will be essential in preserving basic services like public safety and sanitation when the federal government proves ineffectual.

Petrocollapse: A Steep Drop-off in Oil

by Jan Lundberg, *CultureChange.org*

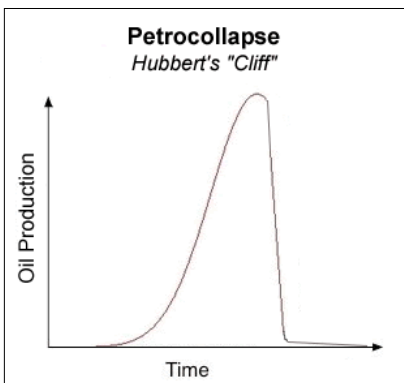
We face an imminent and abrupt oil-free future with dramatically lower per capita energy use. Most literate people have heard of peak oil, but many have been led to assume there will be a slow, down-slope of extracted supply past the peak. This is theoretical, based on estimates of reserves remaining in the ground, accurate or not.

What must be appreciated are the market-supply dynamics and oil industry functions such as refinery constraints. These inflexibilities will trigger not just sudden, crippling shortages but the inability of the oil industry to maintain a flow of products at a sustained, long-term level – a scenario which I call “petrocollapse.”

community gardens will be stripped clean, and car commuters will not be able to get to jobs. Businesses will shut, in part due to their reliance on “just in time delivery.” There will be no floor to the crash until local food supplies can meet what the remaining population size has become.

The oil industry’s only model is growth. The only large-scale economic model known is for growth, made possible in the past from petroleum supplies in ever-increasing abundance. These sources are collapsing in oil-producing countries, and demand will never be met by tar sands, heavy oils, or biofuels. As oil supply plummets, the industry will be unable to adapt. It cannot just ratchet down its refining output to follow a smooth depletion curve. Refineries *must* utilize their capacity at high levels to produce a balance of products (gasoline, distillates, fuel oils). This need will remain even as lower-producing wells are capped and already rusting facilities require ever-growing investments and retrofits.

The quick slackening of business and employment along with worldwide demand-destruction for oil are features of petrocollapse. We are in an early phase, with a sudden, massive supply-crunch inevitable. The hoped-for “recovery” without cheap energy and other resources for a growing population cannot happen. It is just a matter of time for the next Oil Shock and great demand-destruction for oil and other key consumer products. This will transform the modern lifestyle to post-industrial, local living.



In 1979 my firm Lundberg Survey accurately predicted that a 9% shortfall would lead to skyrocketing prices, panic buying, and hoarding – what oil investment

banker Matthew Simmons calls a “run on the energy bank.” When the next global supply crisis occurs without the oil industry’s or government’s ability to come to the rescue, the socioeconomic effects will be rapid and devastating. In days, grocery stores and