

## The Oil Depletion Protocol: An Update

My book *The Oil Depletion Protocol: A Plan to Avert Oil Wars, Terrorism and Economic Collapse* was released eight months ago; given the importance of its subject, I thought an update might be useful.

Relevant developments during these few months have been both encouraging and discouraging.

First the encouraging items. The Oil Depletion Protocol (ODP) has been explicitly endorsed by several cities, including San Francisco, California and Bloomington, Indiana. More significantly, perhaps, it has been implicitly adopted in the targets of the Portland, Oregon peak oil task force, [www.portlandonline.com/shared/cfm/image.cfm?id=145732](http://www.portlandonline.com/shared/cfm/image.cfm?id=145732). The Peak Oil task force of Oakland, California will likely make similar recommendations (I'm a member of that task force).

Post Carbon Institute continues to lead efforts to publicize the Protocol. Last year those efforts began with the hiring of a short-term staffer (Karen Webster) to develop a web site ([www.oildepletionprotocol.org](http://www.oildepletionprotocol.org)), to look into the history of the Oil Depletion Protocol itself, and to research and write a study on how international protocols are drafted and adopted. Continuing efforts by Post Carbon Institute are contingent upon success in raising funds for the purpose.

Last fall I gave presentations on the Oil Depletion Protocol at the annual conferences of the Association for the Study of Peak Oil (ASPO) in Pisa, Italy, and ASPO USA in Boston. I have also discussed it in at least a dozen talks at universities and other conferences, and in two or three interviews for film documentaries (notably *Asleep in America*, which is due out soon).

The International Forum on Globalization (IFG), which played a significant role in developing and informing the anti-globalization movement during the past decade (it figured prominently in the "battle of Seattle" in 1999) has adopted as its new organizing theme the "triple crisis" of climate change, peak oil, and resource depletion. The IFG's continuing function seems to be to provide a unifying focus for thousands of environmental and human

rights NGOs around the world. In his soon-to-be-published Manifesto, which is intended as a focus document for a teach-in Washington, D.C. this fall (where I have been asked to speak), IFG Founder and Co-Director Jerry Mander highlights the Oil Depletion Protocol as an important policy tool.

The book itself has won a bronze Independent Publishers Award in the category of Current Events.

Now for the discouraging developments. There was not an enormous amount of immediate public or official response to the book. There has so far been no discussion of the Protocol at high levels of government in any nation—including Sweden, which has set a target for reducing petroleum dependence that is close to the Protocol's mandate. And sales of the book have been relatively slow (about 5,000 copies so far).

There are several possible explanations for the Protocol's tepid take-off. One is the temporary moderation in global oil prices during the first months of 2007, which in turn generally cooled the growing media interest in Peak Oil (both situations will likely change soon). Another is the enormous attention focused on climate change as a result of Al Gore's film and the release of several significant reports highlighting the rapidity of the onset of climate impacts from growing atmospheric CO<sub>2</sub> levels. It is probably fair to say that environmental NGOs and their funders have become obsessed with the issue of climate change nearly to the exclusion of all other subjects, and discussion in government circles having to do with environmental and energy policy is being framed almost exclusively in terms of carbon emissions reduction. One gauge of the remarkable growth in attention to the climate issue is the fact that the arch-conservative owner of Fox News, Rupert Murdoch, has pledged to make his News Corp. media empire carbon neutral, and to feature the climate message in his TV programming and newspapers. When Murdoch jumps on board an environmental cause, as Amanda Griscom Little put it in her Salon.com article on May 17 ([www.salon.com/news/feature/2007/05/17/murdoch/](http://www.salon.com/news/feature/2007/05/17/murdoch/)), "you know we're past the tipping point on the issue. Think landslide."

Of course, increasing public awareness of the threat of climate chaos is a very good thing. However, as I have discussed elsewhere (see *MuseLetter* #177, "Bridging Peak Oil and Climate Change Activism"), ignorance of energy supply issues is likely to lead to climate solutions that fail. And lack of attention specifically to the problem of oil depletion may well lead to an economic and geopolitical crisis in which efforts to stabilize climate will be thrown

overboard as nations desperately attempt to maintain their economies and their geopolitical influence (more discussion on this below). Hence the need for special policies to address the problem of Peak Oil on its own terms—of which the Oil Depletion Protocol is the clearest and simplest I have seen.

This slower-than-hoped-for progress in publicizing the ODP is leading to a reconsideration of strategy, and even some rethinking of the Protocol itself.

### **A General Resource Depletion Protocol?**

An extremely important finding from Karen Webster's research into the history of the Oil Depletion Protocol was the discovery that Albert Bartlett had anticipated the Protocol in his paper, "Sustained Availability: A Management Program for Nonrenewable Resources" (*American Journal of Physics*, Vol. 54, May 1986, 398-402). I soon found that I already had a copy of the paper in my files, but had not read it! A subsequent study of Bartlett's paper, and his later writings on sustainability, led me to formulate Five Axioms of Sustainability (*MuseLetter* #178, February 2007), of which the fourth is both a rewording of Bartlett's Management Program and a generalized statement of the ODP:

**To be sustainable, the use of *non-renewable* resources must proceed at a rate that is declining, and the *rate of decline* must be greater than or equal to the *rate of depletion*.**

**The *rate of depletion* is defined as the amount being extracted and used during a specified time interval (usually a year) as a percentage of the amount left to extract.**

Reframing the Oil Depletion Protocol as a specific application of a general principle of sustainability puts it on bedrock-sound conceptual footing, since its terms reflect a policy that every society should be applying with regard to every non-renewable resource. The idea of recasting the ODP as a general resource depletion protocol also seems attractive because doing so could help it further address the climate imperative: after all, we need to reduce our consumption not only of oil, but also of coal and natural gas if we are to adequately reduce carbon emissions.

While this idea is certainly worth pursuing, there are reasons for caution. One has to do with coal, whose resources are so enormous that depletion rates would be too meager to be of much help in averting a climate catastrophe. While recent reports by the Energy Watch Group and the Institute for Energy on global coal reserves show that the world's reserves of coal have dwindled from 10 trillion tons of hard coal equivalent to 4.2 trillion tons in 2005—a 60 percent downward revision in 25 years—amounts being produced annually are still only a small percentage of that total. China's is the highest coal depletion rate, at about 1.9 percent per year. The US has a depletion rate of about 0.5 percent; for the world as a whole, the yearly depletion rate for coal is just less than 1 percent.

If the ODP formula were applied to coal, that would mean that each producing nation would reduce extraction by its depletion rate. Only in the case of China would the reduction be remotely sufficient to meet global emissions reductions targets that are now being recommended by climate scientists (i.e., a 60 percent reduction by 2030). Since the global coal trade is tiny compared to the global oil trade (most coal is consumed in the country of origin), reduction in production of coal would translate directly to reduction in consumption. China would be required to reduce its coal production and consumption much faster than would the US, India, Russia, or Australia, and it is easy to imagine China's response to such a suggestion. Only if the Protocol were worded to require equal reductions in production *and* consumption might a negotiating impasse be averted.

The situation is also complicated by the strongly differing categories of coal: anthracite can be five or six times as energy-dense as lignite, and each geographical region has a unique mix of coal types. Should a depletion protocol address coal generally, or would there be a different formula for each category?

Application of the ODP formula to natural gas would also be problematic, in that the size of the resource base is even less certain than that of oil.

Nevertheless, a nonrenewable resource depletion protocol would at least put nations on a declining consumption trajectory—and not only with regard to fossil fuels, but metal ores as well.

At the same time, a renewable resource depletion protocol could be promoted, based on the simple axiom:

**To be sustainable, the use of *renewable* resources must proceed at a rate that is less than or equal to the rate of natural replenishment.**

For every renewable resource, adopting nations would engage in a good faith effort to discover the natural replenishment rate, and would then establish an extraction quota that is smaller. Wherever a renewable resource base was declining, and for whatever reason, a reduction in harvesting rates would be mandated.

With so much talk of sustainability, it is important that everyone understand that these are the *minimal* conditions for a sustainable society. Until these conditions are adopted as explicit targets that are attached to binding policies, all purported efforts on the part of official agencies to achieve sustainability are mere window dressing.

Clearly, these conditions are *not* yet generally understood or accepted. So, how do we best move toward that goal? One route would be to work directly and immediately for the broad-scale renewable and non-renewable resource depletion protocol outlined above. The other would be to begin with one critical resource (oil is the obvious candidate), and then, once the principle of tying production to depletion was accepted, seek to broaden its application to other resource categories.

Given that time is short and that Peak Oil is likely already upon us, the latter strategy makes a great deal of sense. But more thought and discussion along these lines are needed.

## **Implementation**

The ODP sets a target, but does not specify how nations would meet that target. In the book *The Oil Depletion Protocol*, I discuss Tradable Energy Quotas (TEQs) as one policy tool for achieving substantial cuts in total oil consumption. Another policy tool now being discussed is “cap and share” ([www.capandshare.org](http://www.capandshare.org)).

This proposal grew out of Contraction and Convergence, and from FEASTA proposals described in pp. 71-74 of my book. The essence of Cap and Share is simple: each adult would annually receive a certificate for an equal share of carbon emissions rights, and would have the opportunity to sell the certificate at any bank or post office at the current market rate. Fossil fuel extractors and providers would bid to acquire these certificates, with the amount of their acquisition setting the limit for their yearly trade in hydrocarbons. Each year

the amount of carbon represented by the total number of certificates issued would be reduced to meet scientifically set carbon reduction targets. Citizens could also choose simply to hold or destroy their certificates, which would further reduce the total carbon budget for society. The system could be implemented at the national or international level.

The income that citizens would receive from selling their certificates would substantially offset the higher cost of fuel from providers. Meanwhile, the true cost of hydrocarbons would increasingly be reflected in products and services throughout the economy.

The system would include a provision to help countries with special needs make the adjustment: for the first 20 years after the global adoption of the system, everyone would get the same allocation at the rate appropriate for the year 20; the remaining permits would make up a “convergence fund” that would be allocated to national governments according to an agreed set of criteria. Presumably a highly fossil-fuel dependent nation like the US would need lots of those convergence fund permits to enable it to get by as it rebuilt its transport, agriculture, and housing infrastructure to operate on dramatically less energy. Each year the convergence fund would shrink until year 20, when it would disappear.

If implemented internationally, Cap and Share would result in an enormous transfer of wealth from the industrialized north to the less-industrialized south. This is either a great advantage or disadvantage to the proposal, depending on one’s perspective.

One way or another, nations will implement a rationing system for fossil fuels in the years ahead. Whether that system takes the form of high prices, taxes, tradable personal quotas, cap-and-trade, cap-and-share, some combination of these, or another proposal altogether, remains to be seen. The sooner all of the options are brought together and discussed so that their costs and benefits can be transparently assessed, the better.

## **The Equity Issue**

If international equity is a subtext of Cap and Share, that is at least partly because it appears to be a precondition for less-industrialized countries to participate in any global carbon emissions reduction plan. China and India look enviously upon the wealth accumulated by the US, Japan, and Europe as a result of historic fossil fuel consumption. What right do wealthy nations have to draw a line in the sand now, saying, “It was fine for us to use fossil fuels, but you must forgo them so as not to spoil the environment”? Since

the bulk of the carbon emissions released thus far have come from the industrialized countries, shouldn't those countries shoulder the lion's share of the burden of the energy transition? Further, shouldn't the nations that haven't had their share of fuel-based economic growth get a chance at it?

But in order for the poorer countries to have their chance at industrial development without triggering a worst-case climate meltdown, the already industrialized countries will have to agree to reduce *their* carbon emissions proportionally faster than the poorer nations.

This all makes perfect sense from the perspective of the less-industrialized nations. Yet if reducing carbon emissions means economic hardship, it is difficult to imagine a scenario in which the wealthy nations could be persuaded to go along.

One can imagine the now-industrializing countries saying to the already industrialized, "You go first or we will do nothing, which means we all will suffer"—and the US saying in response, "Carbon reduction? In principle maybe, but only if it means no economic pain and no loss of privilege and power. We'd fight before we'd agree to that."

Is there a way around the impasse? Possibly, but it will not be an easy one. It involves reframing the discussion to include the depletion issue.

I would suggest that it is time to make a distinction with regard to equity goals:

- We should aim for rough per-capita equity between and within nations with regard to ecological space (water and land), and for a reduction of human population to fit Earth's long-term carrying capacity.
- With regard to fossil fuels, we should aim for equal rates of *reduction in consumption* rather than *equal rates of consumption*.

The objective of equity in access to ecological space is ethically incontrovertible—even though the attainment of that objective seems remote. It is only conceivable if carrying capacity and population are seriously taken into account.

But the goal of equal decline rates for fossil fuel consumption is even more problematic. It is, as we have just seen, the sticking point in international negotiations regarding climate protection.

A resolution might be achieved if all concerned come to acknowledge that equal rates of reduction in fuel consumption may actually provide a better solution for everyone, for three reasons.

First, it makes better climate sense. China is about to become the world's foremost CO<sub>2</sub> emitter, and India's consumption rates for coal and oil are climbing fast. If most people in these countries attempt to achieve a Western fuel-based lifestyle, the planet is cooked.

Second, it is more practical. Reduction by already-industrialized nations at more than about 3 percent per year would likely destroy their economies, which would throw the world into turmoil. I admit that this is a debatable point: George Monbiot, in his book, *Heat: How to Stop the World from Burning*, suggests a stringent path by which Britain could reduce its emissions quickly enough to satisfy both climate and equity imperatives, but his prescription presupposes plenty of natural gas and the expansion of nuclear power—while in actuality supplies of both gas and uranium are dwindling.

Third, and perhaps most significantly, it's a new game. During the 20<sup>th</sup> century, fossil fuel consumption meant greater wealth. In the 21<sup>st</sup> century, fossil fuel dependency means vulnerability to supply shortfalls, spiking prices, and supply disruptions from war and terrorism. Nations that reduce dependency faster benefit more—so long as they avoid economic collapse. Therefore permitting less-industrialized countries proportionally greater access to fossil fuels in a global carbon reduction agreement does them no favor; it merely fosters greater dependency and therefore vulnerability.

Sooner or later equity activists and leaders in the less-industrialized world must accept that less-industrialized countries will *never* industrialize according to the example of Europe and the US. This may be unfair, but the model set by the wealthy countries is unsustainable and should not be emulated.

However, fossil fuels are not needed for subsistence. Everyone lived without them a couple of centuries ago and everyone will live without them a century or so from now. The only question is how will we make the transition. I would suggest that the industrialized countries can best foster equity now by (1) adopting the principle of equity in ecological space, with targets tied to ecological carrying capacity; (2) agreeing to uniform rates for reduction of fossil fuel consumption; and (3) transferring renewable energy technologies to less-industrialized nations free of intellectual property rights for domestic implementation.

\*

\*

\*

The Oil Depletion Protocol merely offers a target, a goal for reducing our petroleum dependency. Why start with the target? Why not start by simply doing practical things to reduce our dependency, and then see how far we can get and how fast?

The problem with the latter approach—which is the one implicit in the current energy policies of most nations—is that, without a binding target, efforts will likely be confined to those that are immediately profitable and that cause no pain. And those sorts of efforts often result in very small reductions in overall oil dependence and carbon emissions, or no reduction at all. In the US, for example, tens of millions of dollars annually are spent on alternative energy research, and hundreds of millions on ethanol subsidies. Yet consumption of oil and other fossil fuels continues to grow.

Climate activists understand very well the need for targets: the science tells us that there is a limit to the amount of CO<sub>2</sub> that we can discharge into the atmosphere before catastrophic impacts become probable. Therefore there is a limit to the amount of fossil fuel we can burn. That limit must be translated into targets attached to binding policy, backed by penalties for non-compliance, if we are to reasonably hope to stay within those limits and avert catastrophic climate change.

The Oil Depletion Protocol sets a target for reduction in oil production and consumption in a way that is in no way arbitrary, and that in fact should logically apply to the extraction of all non-renewable resources. The debate as to how we will meet that target will no doubt be an interesting and heated one. But we must begin by accepting the target itself, and the sooner we do so, the better.