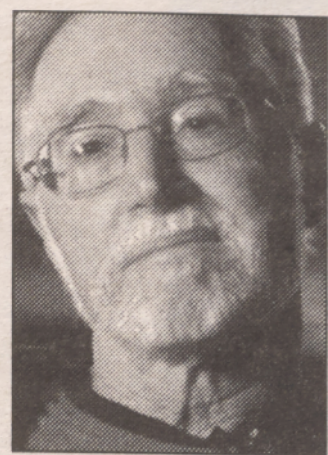


Energy, nukes and geoengineering in the age of global warming



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On Nov. 3, James Hansen signed an open letter addressed to environmental organizations urging them to demonstrate “real concern about risks from climate damage by calling for the development and deployment of advanced nuclear energy.”

Like Hansen and some notable long-time environmentalists who have recently come out in support of nukes, I am desperate. I am desperate because, like them, I know we have very little time left to pull off the greatest technological “re-boot” in human history, turning global Fossil-fuel-istan into global Renew-serve-istan before it is too late. That is why I recently sent my own open letter to those in the climate justice movement who argue that green capitalism is an oxymoron and climate change can only be solved by economic system change. In my view, those who argue that greener capitalism is a false hope and not worth pursuing have no sense of time. They have no sense of how fast irreversible climate change is coming compared to how fast we can marshal support for economic system change. However, I find it sad that people like Hansen are caving on nukes when we do not need dangerous or new technologies to solve the problem.

The problem with geoengineering schemes, such as pumping sulphur dioxide aerosols into the atmosphere or fertilizing the ocean with iron filings, is that they are unproven and highly risky. And if history is any guide regarding small scale human ecological experimentation, we should anticipate that an attempt to prevent climate change through geoengineering on a global scale may well have unforeseen consequences that would be disastrous. In all likelihood, focusing on geoengineering schemes will prove fruitless and only distract us from getting on with mundane solutions we know will work.

However, unlike geoengineering proposals where long-run consequences are highly unpredictable, the long-run consequences of making the global energy system fully nuclear is predictable. Where geoengineering schemes pose unknown dangers, we know very well what dangers lurk if we fully embrace a nuclear future. Nukes are the epitome of the present generation going easy on itself by refusing to solve a problem it could solve by safe means today, and instead kicking disaster down the road onto our children or grandchildren. Of course it is also a way for major international corporations to turn a crisis — largely of their making — into a new source of bloated profits at public expense. If this were not the case, it is hard to imagine that a “nuclear solution” would even be discussed.

In a situation where speed is essential why should we be talking about nuclear plants that take longer to bring online than it does to expand renewable energy production, not to speak of how quickly we can increase energy

efficiency? As Naomi Oreskes said in her response to Hansen’s letter: “Like many distinguished scientists and engineers before them, they are overstating the promises of nuclear power, and understating the risks. It hasn’t been the miracle technology that its advocates envisioned back in the 1950s, and it remains one of our most expensive sources of electricity.” (New York Times 11/15/2013) Nuclear energy has a perfect track record in one area only: achieving massive cost overruns. And only by capping damages from a nuclear disaster, as the US government does through the Price Anderson Act, or by simply ignoring who will pay for damages — as other governments who have embraced nuclear power do — is nuclear energy able to compete with other forms of energy in the marketplace.

But the important point is that eventually a fully-nuclearized, global energy system will create a nuclear disaster, if one is not already brewing out of control in Japan. And the tragedy is that this is not necessary. Instead, we need to muster the political will to do two things to respond to a crisis that threatens civilization as we know it.

One, put a high price on carbon to discourage fossil fuel consumption. Zhao Zhong hit the nail on the head in his response to the Hansen letter: “The single most important thing we must do is place a high price on carbon emissions to make fossil fuel energy less attractive when compared to other energy sources. If we price coal and other fossil fuels to capture their true costs, it will immediately make all the alternatives to fossil fuels more competitive and drive innovations in the clean energy sector.” (New York Times 11/15/2013)

Two, launch a World War II-scale government push to change production priorities to expand renewables and dramatically increase energy conservation. When German Nazis, Italian Fascists, and Japanese militarists threatened civilization as we knew it, the Western democracies and the Soviet Union proved able to shift resources from producing butter to guns remarkably quickly. Climate change is a threat to civilization every bit as great, and merits a response every bit as massive. In short, the obstacles to preventing climate change are political, not technical, and the solution is political, not technical, as well.

While I remain unimpressed by arguments that we should hang our hopes on some “technical fix,” there are some “technical” arguments that do impress me. I find evidence presented by those who argue that existing technologies can easily improve energy efficiency by as much as 80 percent quite convincing. Admittedly, I am skeptical of claims that most of these energy efficiency measures are already cost-effective, because one thing I do generally trust capitalists to do is implement changes that lower their costs and increase their profits. But I am very optimistic that if we put a price on carbon emissions anywhere close to reasonable estimates of the damage it causes, this would immediately make enough energy conservation projects cost-effective to rapidly increase energy efficiency by 50 if not 80 percent. Most energy conservation

measures are not high tech and we already know they are incredibly “efficient” because the social benefits far outweigh the social costs of implementing them.

What about the argument that we must expand nukes because renewables pose an “intermittency problem.” For example, that the timing of energy production from renewables may not match the timing of energy consumption needs? Paradoxically, the Germans have discovered that exactly the opposite is true. The problem with nuclear is not only that it is expensive, but also that you have to run it at high capacity all the time to defray its fixed costs, which means that lots of power output will be redundant during periods of strong sun or wind production. The Germans, who have expanded wind energy faster than anyone else, have discovered that their accelerated phase-out of nuclear is not only compatible with a big push for renewables, but required by it.

However, any intermittency problems from renewables cannot be a reason to delay cuts in fossil-fuel energy production. Because we can increase energy efficiency much faster than we can bring renewable energy online, there is no reason we cannot start phasing out fossil fuels immediately. We do need time to develop new technology in the field of energy storage. We also need time to redesign electrical grids to better handle the intermittency problems renewables bring. But increasing energy efficiency using well-known technologies can easily buy us all the time we need. The rest reduces to mustering sufficient political will to forge ahead.

Continuing to burn fossil fuels is certain disaster. But rapid expansion of nukes is also certain disaster at some point down the road. Three Mile Island? Chernobyl? Fukushima? How many times did God give Noah the rainbow sign? It’s not “game over” yet. But it soon will be if we fail to push the fossil fuel industry and its political protectors out of our way, roll up our sleeves, and rise to the historic challenge of preventing human-induced climate change using known technologies that are safe.

For any who want to know if all this can be done while simultaneously traveling down a longer road to eventually replace our environmentally destructive economic system driven by competition and greed with a sustainable system of equitable cooperation, the answer is that of course it can. And the empowering experience of responding

effectively and fairly to climate change in the here and now will make it more apparent to more people that we both can and should do so.

