

THE NUMBERS OF FOREVER

When children are asked to do some small chore, they often reply: “Oh, Mom, that will take forever.” Their friends are waiting, and they must have immediate gratification of anticipated pleasures – they cannot wait “forever.” In another context, people often ask how long humankind has to “solve” the problem of global heating, and then they provide the answer of 10 years, 25 years, 50 years, etc. In short, the problem is not an immediate one to them – humankind has “forever” to reduce greenhouse gas emissions.

Even the developing biofuels industry does not have specific goals or greenhouse gas emissions estimates. Wald (2007a) questions whether assessments of the energy losses and pollution releases of ethanol production will inform policy:

For example, a broad-based coalition of biofuels, wind and solar power advocates has formed an umbrella group calling itself “25 x ‘25.” They want 25 percent of the nation’s energy resources to come from renewable sources by 2025. Dozens of members of Congress are endorsing the group, yet at a news conference last spring in Washington, D.C., held to introduce the organization, its leaders could not even say whether wind, solar, ethanol or direct combustion of biomass would be the largest source. There was little desire to blemish the concept with arithmetic.

Enthusiasm is not a substitute for a systematic, orderly plan to achieve a particular goal on a particular date. An uncharitable person might conclude that neither some congresspersons nor the general public wants attractive illusions to be shattered. Wald (2007a) summarizes his thoughts on ethanol as:

In the meantime, relying on ethanol from corn is an unsustainable strategy: agriculture will never be able to supply nearly enough crop, converting it does not combat global warming, and socially it can be seen as talking food off people’s plates. Backers defend corn ethanol as a bridge technology to cellulose ethanol, but for the moment it is a bridge to nowhere.

Pimentel (2003) has published much on energy input/output ratios and asserts that more energy is used to make a gallon of ethanol than is produced when it is burned.

The numbers of the forever charade are endless, but one important set has to do with energy efficient cars. The hearings in the US Congress on efficiency of fuel use in automobiles has very modest goals to be reached years from now, although automobiles already exist that get well over 40 miles per gallon (i.e., the Prius). Why so many years in the future? During World War II, the United States survived a terrible beating at Pearl Harbor and the Philippines and had to do something at once – not in the future, but NOW. Japan’s zero fighter plane was superior to the American one, so better ones were built – at once, not in the distant future. The United States also built amphibious ships that never existed before and vast numbers of ships that could surround Iwo Jima as far as the eye could see. All this activity and much more were completed in a period of approximately 4 years! Are people supposed to believe that the United States cannot produce large numbers of fuel efficient automobiles when Richard Rusk, in the apartment next to mine, is already driving one? Has the nation that survived the Great Depression and World War II suddenly become so fearful that it can no longer function after hearing bad news for which remedial measures are at hand? Major individual conservation (i.e., use less energy per capita) and public transportation matching that in Europe and Japan (e.g., change from rails to trails to trails to rails) could be improved substantially in the short term and dramatically in a few years (i.e., not 2025, but 2015).

Why doesn't humankind address obvious problems with the urgent action they deserve? In his book *The Assault on Reason*, Gore (2007, p. 215) states:

In other words, reason must be separated from the "self-love" of the individuals using it, and focused instead on the public good – by insuring that no individual or small group can exercise power without entering into a negotiation with others who must be convinced that the proposed exercise of power meets the test of reason.

American citizens must cease tolerating the rejection and denigration of science (e.g., global warming is a hoax perpetuated by hysterical scientists) because the science conflicts with political and corporate ideologies. More important, American citizens must understand the processes of science and reject the pseudostudies funded by special interest groups with little or no scientific credentials. For example, in the last decade, much has been made of the uncertainties in science. However, science is a probabilistic determination based on validated evidence. The general public has been persuaded that scientific theories are mere guesses instead of being told they are carefully structured statements based on the preponderance of scientific evidence. The news media has not been helpful (it has even been called *dysfunctional journalism* that fails to inform the people) in informing the public. If the public is inadequately informed, a reasoned discussion cannot occur. However, in the Internet era, apathy is the only excuse for not being informed. Since not only national but global security is threatened by the global environmental crisis, apathy is not a valid survival response. Former US President Roosevelt used leadership to control fear and anxiety at the outset of World War II: "The only thing we have to fear is fear itself." Fear of terrorists can divert attention from the global climate crisis, especially when demagogues exploit fear. Government efforts to rewrite scientific articles on climate change result in failure to curb greenhouse gas emissions when they should be dramatically reduced. Indifference is substituted for concern when the apparent magnitude of the crisis is diminished.

The estimate has been made numerous times that enough coal is available to last 250 years. This estimate is still being used, despite the fact that it was made in the 1970s and was based on the assumption that 25% of the coal that had been located was recoverable with current technology and at current prices (Wald 2007b). However, as the US Congress considers billions of dollars in subsidies to make gasoline and diesel substitutes from coal, a more robust information base is essential. A report by the US National Academy of Sciences, released in June 2007, estimated the probability of enough coal to meet US needs *at current rates of consumption for more than 100 years* (italics mine), but if Congressional policies are put in place, the rate of use will increase markedly. Worse yet, recent studies by the US Geological Survey showed that, at least in some areas, only 5% of the coal was recoverable with today's technology and at current prices (Wald 2007b). Something tells me that numbers must be more precise and the citizenry must realize that only finite resources exist on a finite planet.

The decline in petroleum availability is not new information. Klare (2004, p. xiii-xv) mentions US President Franklin D. Roosevelt's February 1945 meeting with King Abdul Aziz ibon Saud of Saudi Arabia, which produced the unprecedented oil-for-protection arrangement that has governed American ties with Saudi Arabia ever since. Clearly, President Roosevelt recognized, near the end of World War II, how essential oil was to the US economic vigor and lifestyle and that, without cheap oil, neither could endure. The President was keenly aware of the drain that World War II had placed on American oil reserves and could envision a day when the United States would need to import foreign oil. Subsequent US presidents have had a similar view, since petroleum is considered a national security matter, falling under the purview of the US Department of Defense and other administrative entities responsible for safeguarding American vital interests. In addition, the finite supply of oil was recognized globally. King Hubbard's publications of the 1950s indicated that oil was not going to last forever and that peak oil would be in the early part of the 21st century. What is astonishing is that no robust plans were made in the period after World War II for the post-petroleum era. The most discussed alternative, biofuels, seems to assume that the profligate use of energy will continue "forever."

Perhaps concern for the planet's victims of global climate change will be the forcing factor for immediate remedial action on energy use. Kristof (2007) calls attention to the fact that gas guzzling automobiles are adversely affecting the subsistence of African farmers and may well cost them their lives.

The insistence on robust numbers rather than meaningless numbers that, at best, only indicate intent is long overdue. Questioning the basis for the numbers is long overdue. May it be so!

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