

There are no technofixes for Peak Oil

Contributed by Alice Friedemann
02 June 2006

[Note: this report resides in the new section on this website, Energy and Survival.]

When you read articles that promise renewable energy, go to the library and pore over old Popular Science and Scientific American magazines. You'll see a lot of Gee-Whiz contraptions that never materialized.

The only information you can trust on matters of science and engineering are peer-reviewed articles in respected journals. And even then you have to be a bit skeptical. For example, the Farrell Science paper on ethanol had to resort to the results of three non-peer-reviewed USDA sponsored papers to come up with a very tiny favorable positive net energy result for ethanol (half of the papers cited).

Here are some books/links to read to understand the technical challenges of various proposed energy solutions:

Howard Hayden. 2005. The Solar Fraud: Why Solar Energy Won't Run the World

Martin Hoffert, et al Advanced Technology Paths to Global Climate Stability: Energy for a Greenhouse Planet - 1 Nov 2002 - Science

Joseph J. Romm. 2004. Hype About Hydrogen: Fact and Fiction in the Race to Save the Climate

U.Bossel & B.Eliasson. Energy and the Hydrogen Economy

www.methanol.org

Alice Friedemann. The Hydrogen Economy: Energy and Economic Black Hole

energybulletin.net

D. Pimentel, T. Patzek. Ethanol Production Using Corn, Switchgrass, and Wood; Biodiesel Production Using Soybean and Sunflower . 2005. Natural Resources Research Vol. 14, No. 1

It's an ecological crash because so many threads of depletion and pollution are coming together at the same time, just as Meadows' Limits to Growth projected.

Cheap and plentiful energy is hiding the fact that we're already in an ecological crisis. Energy is holding many existing environmental disasters at bay. Here are just a few:

1) Invasive species in the United States cause major environmental damage with losses of about \$137 Billion per year. But with energy intensive machinery and chemicals we are able to control the damage to a much larger extent than we could otherwise (i.e. getting invasive water weeds out of irrigation canals, etc).

2) Depletion of fisheries worldwide from over-fishing, nitrogen-runoff dead zones, and mercury poisoning (which will only increase as we turn to coal). We still have enough energy now to send ships to the most remote corners of the planet to harvest the remaining fish and to grow fish on fish farms, but as energy declines, so too will seafood (as well as from all the other contingencies, such as refrigeration).

3) Now people don't need to burn wood to cook with and heat their homes, but as energy declines, the decimation of forests will accelerate.

4) Aging infrastructure will no longer be able to be repaired. We already have terrible grades in infrastructure while there's cheap energy. The American Society of Civil Engineers gave the following grades to our infrastructure in 2005.

Grade: - Infrastructure Components

C+ Solid Waste

C Bridges

D+ Aviation Transit

D Dams Energy Hazardous Waste Roads Schools

D- Drinking Water Wastewater Navigable Waterways

As bridges and roads fail, as water begins to carry disease, etc., the ability to deliver clean food and water will decline. Ninety percent of our life-spans (from an average of 40 years a century ago to 80 years now) are due to clean food, water, use of natural gas and oil instead of coal and wood -- only 10% from pharmaceuticals and medical technology.

5) Depletion of ground water, which half of Americans rely on for drinking water to below what can be manually pumped.

6) Depletion of the Ogallala aquifer, where a over a quarter of our grains, hogs, and cattle grow. This will lead to another dustbowl and turn the land into a desert across over 175,000 square miles of land in the ten high plains states. Already millions of acres have been abandoned because the energy costs to pump water up are too high.

7) Crop production reduced by:

- a) Lack of fertilizer and pesticides on land that's been ruined by them.
- b) Global warming making weather unstable, resulting in droughts, floods, frosts, and heat-waves
- c) Continued reduction of prime farmland from erosion, desertification, and salinization.
- d) An already significant loss of prime farmland from cities, roads, parking lots, and suburban sprawl
- e) Lack of knowledge about growing organic food
- f) Lack of non-hybrid seeds to plant.
- g) Lack of animal muscle power to do work and transport goods.
- h) Acidic soils and waterways from coal burning

8) Increasing susceptibility to pandemics as the health system declines

The end result of an ecological collapse is a die-off, which will appear to us as hunger, disease, crime, regional civil war and potentially world war over the remaining resources (though of course fighting a war for resources is too crass a reason, perhaps it will be spun as a "War against Terrorism").

So grieve, be depressed and frightened, go through the stages of denial and anger, and eventually you will emerge more clear-headed and delighted with the wonderful moments you have every day. You'll appreciate far more how fabulous it is to live at the peak of civilization and stop taking things for granted, and if you're really smart and lucky, be better prepared for the ecological crash ahead.

It's important to understand the true nature of the situation we're in so that the best solutions for mitigating the suffering and hard times ahead are adopted. If we believe that some new energy contraption is about to save us, we risk becoming a cargo cult nation, magically wishing for a solution that never seems to fall from the sky.

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Alice Friedemann lives in the San Francisco Bay area.

For a complete reading list, see:

www.energyskeptic.com (go to the Book List spreadsheet)