Technofix bubbles of hydrogen and biofuels at Pentagon's Energy Conversation

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Energy in the form of hydrogen, as well as biofuels, is one of the few mainstays of hope for clinging to global economic growth. When it comes to today's growing worries over both the world peak in oil extraction and global warming, government and industry favor certain renewable energy technologies to supplement and then supplant decades more of fossil fueling.

What of lifestyle change and truly sustainable, local economics? That's not what's being planned for you by the corporate state or even by some entities we would trust. Therefore, we are all allowing a tragic waste of time and more global warming that is avoidable. The technological solution (or "the technofix") is what we examine in this report, for its appeal serves to excuse the absence of immediate, realistic national and global action on preparing for what a growing number of people see as petrocollapse.

The funded environmental movement is in the technofix camp rather than tackling maximum petroleum reduction, and has thus far generally not addressed the issue of Peak Oil. So, such organizations are hampered in trying to curb global warming.

Many proponents of hydrogen and biofuels do want to see massive conservation of energy and other resources. Such green proponents are also often anti-war, anti-nuclear power, in favor of global veganism, and ready to acknowledge the Earth's need for a much smaller population of humans. It is obvious to green proponents of massive alternative energy systems that action must be taken immediately to deal with greenhouse gas emissions and runaway species extinction. But that action and its relation to one's vision of the future are a burning issue involving every one of us.

The latest Pentagon-sponsored Energy Conversation featured Jeremy Rifkin as its speaker on May 22, in Crystal City. That's across the Potomac River from Washington DC where Rifkin's Foundation on Economic Trends consults for governments and energy utilities. Rifkin is of two worlds, activism and high-finance business planning with corporate clients. For example, he is close to Italy's new prime minister and gives consultation to him for free. Rifkin has not left behind his earlier concerns of entropy (having published a classic book by that name), abandoning animal-based dieting, and genetically engineered crops. So, one hopes his support of "sustainable growth" really refers to qualitative growth.

Rifkin makes a smooth presentation in support of rapid hydrogen-systems implementation, and before this Pentagon/DC energy crowd he urged more research and development in the best tradition of the military's know-how. He tried to disabuse the audience of going the fossil-fueled route of deriving hydrogen to carry energy, while trying to get us all to imagine little fuel-cells that will be even more ubiquitous and essential than i-Pods or laptops. Rifkin hopes the military can come up with an Internet-like technological grid that will involve a billion or more people in generating energy in a free market. This vision of the future raised questions that I voiced publicly; more concerns were formulated later as I tossed on my pillow.

Let us put aside for a moment the issue of practicality from a physics standpoint: in brief, hydrogen "has to be chemically extracted from substances, such as water or coal. Extraction consumes significantly more energy than is released when hydrogen powers a fuel cell." (Energy Bulletin, Mark Derewicz in Endeavors, University of North Carolina at Chapel Hill, quoting astrophysicist Gerald Cecil "whose energy outlook doesn't include hydrogen.")

The big assumption that Rifkin and other proponents of a grand technofix make is that there will be a continuity of the fossil-fueled system to allow for a transition to a cleaner version of what society is doing. It sounds like a dreamland of billions of consumers using manufactured gadgets that somehow get past resource limits and the poisoning of our land, air and water. This Culture Change report does not aim to disrespect the very serious work of planning to use energy more efficiently in the future. After all, utilities and car-makers are looking at major inroads for non-fossil-fueled, non-nuclear energy systems that are beginning to be mandated in places such as California and the European Union.

Be that as it may,

there is almost universal lack of awareness on the nature of the oil industry. Such as, the need refiners have to run at high capacity and churn out a balance of light, medium and heavy products to be disposed of immediately and without end. Very little of the vast, vertically organized fossil-fuel business is set up to cut itself back to cope with post-peak falling extraction. Without adequate supply to keep everyone going as consumers, the whole process will unravel as significant numbers of people cannot keep commuting for lack of fuel. The same goes for distribution of food and other just-in-time delivered materials and products. It will then be suddenly clear to millions upon millions of former consumers that the local ecosystem, such as it is, is what must provide all needs.

This kind of collapse and economic transition is almost never spoken of in mainstream circles because there seems to be no cure to it except for an unthinkable culture change equated with poverty at best. This transition, for better or worse, as we fight for sustainability on a crippled and compromised planet, is what I see as humanity's next revolution - not what Jeremy Rifkin envisions to be our species next phase, a Hydrogen Economy revolution.

Rifkin appears to have missed SAIC's report headed by Robert Hirsch, "Peaking of World Oil Production: Impacts, Mitigation, & Risk Management" given to the U.S. Department of Energy in February 2005: If peak is dealt with only upon its clear arrival, then "severe economic hardship" results. Keep in mind the need for language to be restrained by scientists and consultants for politically-astute bureaucracies.

Rifkin makes the intelligent appeal to extend, if possible, fossil fuels only as the conversion means for getting to his eventual Hydrogen Economy liberated from fossil fuels and nuclear. Other analysts have made the case for using remaining, dwindling petroleum to make solar or wind systems, and even decommission roads to restore nature.

Rifkin won over a segment of the crowd early on by providing an answer to how can we have a biofuel-based agriculture system for the global consumer economy when growing food on available crop land is vital for our huge population. Simple: eat lower on the food chain. You can have it both ways, the present economy with plenty of energy and food, Mr. Steak-eater, if you eat veggie burgers instead. In other words, free up cropland being used to produce grain for animals, and go produce, on that formerly wasted land for animals, plenty of biofuels. Rifkin is not impressed with corn for alcohol fuels, but believes beets and other crops can make the energy desired for, presumably, much of the car fleet and other supposed needs of the American lifestyle. Rifkin needs to be more impressed with the need to leave biomass on the ground where it's grown, to build soil and prevent erosion and drought.

The obvious problem with freeing up animal land to grow fuel, to anyone looking at peak petroleum, is that the nation's crop production is already completely hooked on natural gas and oil to grow food. When that system crashes from petroleum shortage, there is hardly going to be a change-over to biofuels as people starve. People will deal suddenly and desperately with the wasteful energy practices and water demands of cattle raising by haphazardly slaughtering the cattle for meat, and trying to grow plant-based food crops on those ranches and pastures. Besides lower yields, the trouble will be in trying to truck that food around for hundreds and thousands of miles - not possible in a petroleum-starved world. But, what if hydrogen fuel and a vast new infrastructure are available very quickly?

Hydrogen energy will not grow food, in terms of supplanting the human and animal power to put seeds in the ground, water them, weed them, thin them, feed them, or pick the crops or harvest the seeds. Can non-petroleum made-and-powered machines and chemical products do those things for us if based on hydrogen and other "renewable energies?"

Such questions aren't raised when the illustrious Jeremy Rifkin, advancing his well-paced presentation and name-dropping, chug along confidently. I felt envy whenever I heard him say "I was advising the Chancellor of Germany… I tell CEOs this…" I would love to be well paid to tell them what I believe, seeing them scratch their heads over the end of growth and the lack of profit-taking in a petrocollapsed era. What folks from top to bottom prefer not to anticipate is that the oil market will turn a modest, initial but permanent shortage into a paralyzing supply crisis that will take down the global economy in a matter of days. Think of the federal government trying to fix a national Katrina, or the 1970s oil crises in the U.S. Any frantic action will add to the snowball of market forces to exacerbate shortage. Rationing fuel now would be too risky to today's false but profitable calm.

From Rifkin's book The Hydrogen Economy's webpage, at The Foundation on Economic Trends' website:

"Looming oil shortages make industrial life vulnerable to massive disruptions and possibly even collapse.

"While the fossil-fuel era is entering its sunset years, a new energy regime is being born that has the potential to remake civilization along radical new lines, according to Rifkin. Hydrogen is the most basic and ubiquitous element in the universe. It is the stuff of the stars and of our sun and, when properly harnessed, it is the "forever fuel." It never runs out and produces no harmful CO2 emissions.

"Commercial fuel-cells powered by hydrogen are just now being introduced into the market for home, office and industrial use. The major automakers have spent more than two billion dollars developing hydrogen cars, buses, and trucks, and the first mass-produced vehicles are expected to be on the road in just a few years.

"The hydrogen economy makes possible a vast redistribution of power, with far-reaching consequences for society. Today's centralized, top-down flow of energy, controlled by global oil companies and utilities, becomes obsolete. In the new era, says Rifkin, every human being could become the producer as well as the consumer of his or her own energy – so called "distributed generation." When millions of end-users connect their fuel-cells into local, regional, and national hydrogen energy webs (HEWs), using the same design principles and smart technologies that made possible the World Wide Web, they can begin to share energy - peer-to-peer - creating a new decentralized form of energy use."

In this approach, Rifkin and his consultancy are telling big business and government what they want to hear, and getting paid for it. A lot of unrepentant consumers find appeal in this approach as well, whether they have a problem with George Bush's fossil fuels world or not.

The Pentagon-sponsored Energy Conversations are something amazing, in that the nation is served with transparency on energy issues – disclosing who knows what, and what we might expect as a society. In July the topic will be biofuels, led by Suzanne Hunt of Worldwatch Institute. I asked her if she would cheerlead the Pentagon audience into visualizing tanks and missiles inflicting collateral damage via biofuels. She came across as humane and sensitive while appreciative of my attempt at humor.

The Energy Conversation series is a very good thing. It is just as wonderful that a Pentagon audience - the energy brains of the Military Industrial Complex - hears something as soulful as Jeremy Rifkin's unflinching advocacy of a stabilized climate and an end to species extinction. His honesty about optimum population size for the planet, about having to renounce climate-changing dirty fossil fuels as well as nuclear energy, and about eating animals as a staple no more, were even falling on sympathetic ears, although some questioners did not understand why we cannot continue to spread nuclear power as some kind of answer to energy decline.

All told, the greatness of the forum - blessed by Donald Rumsfeld who was gotten to by the right Pentagon staffer at a party who wanted energy addressed openly - and the opportunity to have Rifkin share his vast knowledge and valuable guidance, do not make the technofix any more viable. He ended his talk with a appeal to learn more, on the spot or later on, about ways the military is improving the chances for a network based hydrogen energy system - just as the military developed the Internet so that communications could not be taken out at any one central target.

We have run out of time to change our society away from petroleum in a graceful way as an industrial society. Some of the few options for maintaining the world's 85 million barrel per day crude-oil frenzy are clearly unlikely to keep the patient alive: liquified natural gas will never be provided to the U.S. in vast enough quantities or cheaply enough, and the tar sands of Alberta will at best provide 5 million barrels a day of oil-equivalent within 10 years (at a net-energy loss and with vast damage to the environment).

When listening to Jeremy Rifkin or Lester Brown, both of whom know well Earth's ecological plight, it's as if simple curtailment of fossil-fuels use - to the necessary extent of even throwing economics into shrink mode instead of growth - is just too simple. So, to smile at well funding inquiring minds, a "have our cake and eat it too" and "win-win" vision is cooked up with much hope and good intent. However, not up for discussion is getting rid of cars, even though they will be just useless trash clogging quiet post-petrocollapse streets. This is not a fundable or happy outlook, and rather inconvenient for drivers who presently don't use bicycles or mass transit.

More bad news for the four-wheeled technofixers and optimists of status-quo continuity: Richard Register of Ecocity Builders reports to Culture Change that

"A market analysis group called CNW Marketing Research, Inc. out of Bandon, Oregon did a two year study of hybrids and found they were worse, not better in terms of life cycle energy consumption than comparable gasoline powered cars. That includes energy used in manufacture and recycling and disposal of very complex systems including loads of batteries. Then they are $4,000 to $6,000 more expensive than comparable non-hybrids. They are virtually un-reparable by anyone without a PhD in repairing hybrids, and many auto repair shops are declining to fix them - they go back to dealers where the price for repair is four to five times repairing similar problems on a conventional car. This means they are for the rich faux environmentalist crowd who want to keep driving and feeling good about themselves all at the same time. Shops have to gear up by buying $20,000+ in special tools, which means the home mechanic and person aware of peak oil would be an idiot to buy one even if they believed the hype that they were supposed to be better cars for the environment. Forget fixing it yourself. In addition to the $20,000 the car repair shop owner needs to train the mechanics in completely unfamiliar territory, which is advanced electronics and computers, a yet greater though widely variable cost. I learned most of this from the San Francisco Examiner, Car and Driver Magazine and interviews in the Sacramento Bee of many car shop owners in the Sacramento area who are refusing to repair hybrids."

Question and challenge for Rifkin et al

Wondering how this Internet-like hydrogen revolution might actually come about if some mighty big questions had good answers, I asked this question in the well-packed ballroom after giving my name and affiliation:

"Jeremy, I have a similar position on decentralization as you, but I'm for lower tech. It sounds as if you are advocating a continuation of the consumer economy with the same population size or larger. Have you quantified how much resources such as plastics from petroleum could float how many consumers for how long to have this global economy – assuming there's no entropy or starvation from petrocollapse? Do you have an equation for your vision?"

Two things struck me from his response: it was in effect an admission that he and his adherents do not have the equation, nor do they understand the potential for petrocollapse. But it was Jeremy's earnest appeal for a phased

"population reduction to two billion on the planet by a century or two" that earned extra respect from me and others for him. One can't get much more progressive before any Establishment audience.

Nevertheless, when do we put all our facts on the table and come up with honest options to cope with the end of the Oil Age and its associated crises? The answer may be that there are no leaders, and everyone is on his or her own. National leaders are becoming irrelevant and obsolete for ecologically based, local economics.

I knew Jeremy would not have a comprehensive, satisfactory answer to my question. I was later approached by the moderator and praised for my question. By now I am fully prepared to challenge the Triumvirate of Technofixers, Amory Lovins, Lester Brown, and Jeremy Rifkin to a public debate on petrocollapse and the technofix. (So that the oil industry is not left out, let's include Trilby Lundberg of the former family firm Lundberg Survey that I used to manage.) The sooner such a debate and airing takes place, the sooner the public will stop expecting miracles or "something for nothing" (Jim Kunstler's pet peeve about American consumerism). Perhaps many folks would then start taking action toward mitigating the effects of peak oil and other shortages and resultant conflict unprecedented in history. What part of "petroleum reduction to the maximum" is hard to understand?

We are also out of time for Mother Earth: her breast of nurturing milk is being microwaved. Buried in the back pages of the Washington Post on May 23, in the "Findings" mini-column - billed second fiddle after flu shots - is the story "Global Warming May Be Faster Than Predicted":

"Greenhouse gases spur global warming, and scientists said that global warming in turn spurs greater greenhouse gas emissions, which means Earth could get hotter faster than climate models predict.

"Two scientific teams, one in Europe and another in California, reached the same conclusion: When Earth has warmed up in the past because of the sun's natural cycles, more greenhouse gases wee spewed into the atmosphere. As greenhouse gas levels rose, so did Earth's temperature.

"But previous periods of heating and cooling were not influenced by the burning of fossil fuels, as is the current warming trend, said Margaret Torn of Lawrence Berkeley National Laboratory.

"Current climate models predict temperature increases of 2.7 to 8.1 degrees Fahrenheit, but Torn's team found that additional carbon dioxide cause by the natural solar cycle could push these temperatures higher.

"That could mean increases of 2.9 to 11 degrees, and the higher temperatures are more likely, the scientists said in a statement. Both articles are to be published Friday in Geophysical Research Letters."

Be seeing you at the depaving parties and out on the former highways with our pedal machines! We'll be planting food and gathering acorns more likely than toying with little fuel cells. Yes, there will be renewable energy systems and other technology, but peak oil means an entirely new ballgame that is ours to shape now. To get there we must take the time for the unfortunate distraction of bursting bubbles of fantasy and deception.

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The Dept. of Energy's Hirsch report (SAIC):

projectcensored.org/newsflash/the_hirsch_report.pdf

Jan Lundberg's latest peak-oil conference reports are on Energy Bulletin:

energybulletin.net/16169.html

The Hydrogen Economy – Energy and Economic Black Hole, a Culture Change report:

culturechange.org/alt_energy.htm#H

The Foundation on Economic Trends' hydrogen economy:

foet.org/Green%20Hydrogen%20Coalition.htm

Feeling the Heat, by Mark Derewicz, Energy Bulletin, May 24, 2006:

energybulletin.net/16238.html

Ecocity Builders, Richard Register (president)

ecocitybuilders.org

Worldwatch Institute's Biofuels Project with the German government:

worldwatch.org/press/news/2005/06/27/