Various Authors
Alternative Energy Technology?: Articles from “Green Anarchist”
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concept of mathematical integration, the max power transfer theorem, and at least one fundamental current standard. His little scam ripped off investors life savings, and eventually they complained. Judge Corzine of the Ohio court system found a “gross and egregious fraud”, but imposed a fine of only $1.

The Hype continues, and dreamers still think this technology will bring in a new era of pollution free transport.

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by the reformation of methane. But the methane really has to want to reform. Please also note that because of the staggering loss of energy, use of electrolysis for bulk hydrogen apps is a really, really dumb thing to do. It is the equivalent of exchanging two US dollars for one Mexican peso. www.tinaja.com/h2gas01.asp

Harnessing energy from geothermal springs in Iceland, to make hydrogen, has led the fuel-cell hype industry to claim Iceland will become the "Kuwait of the North." In reality, it's a scenario similar to the bullshit claims made about vegetable oil biodiesel fuel. It can never supply more than a tiny fraction of world energy needs, even when exploitation levels reach their natural boundaries.

On Internet sites that contribute to the hydrogen fuel-cell hype, there is little or no mention of these insurmountable problems: At the time of writing this, I did an Internet Google search for "hydrogen fuel cell" and got 32,200 results. I didn't have many hours to click through hundreds of links looking to find a site not part of the bullshit hype . . .

Hydrogen's potential use in fuel and energy applications includes powering vehicles, running turbines or fuel cells to produce electricity, and generating heat and electricity for buildings. The current focus is on hydrogen's use in fuel cells.

A fuel cell works like a battery but does not run down or need recharging. It will produce electricity and heat as long as fuel (hydrogen) is supplied. A fuel cell consists of two electrodes — a negative electrode (or anode) and a positive electrode (or cathode) — sandwiched around an electrolyte. Hydrogen is fed to the anode, and oxygen is fed to the cathode. Activated by a catalyst, hydrogen atoms separate into protons and electrons, which take different paths to the cathode. The electrons go through an external circuit, creating a flow of electricity. The protons migrate through the electrolyte to the cathode, where they reunite with oxygen and the electrons to produce water and heat. Fuel cells can be used to power vehicles or to provide electricity and heat to buildings.

The hype industry gets off scot-free with outrageous bullshit. One Stanley Meyer claimed to have invented a new way of making hydrogen which violated thermodynamic laws, energy conservation, Faraday's laws, the nature of Fourier Series, hydrogen overvoltage properties, the

In other words, that fusion has always been complete hype and that they may never get it working at all. In this, it certainly is fission+, where at least it was only the safe disposal of the waste they hadn't figured out before spinning stories to suck the public purse dry.

Hydrogen Fuel Cells: Energy of the Future, or South Seas Bubble?

by Mr. Blobby

In a world facing wars for oil, we desperately need an 'alternative' energy source for the future. Hydrogen fuel cells, as used in the Space Shuttle, are the energy source of the future, according to the hype surrounding fuel cell research. But research funds are worth lots of $$$; so how well founded in scientific reality is the current optimism in the face of problems which beset the hydrogen fuel cell industry?

Look at a working model of a hydrogen fuel cell, and you see a wonder of science: Hydrogen 'burned' with no smoke, water the only exhaust. Look a little deeper into this miraculous technology, and you see that the heavy and cumbersome hydrogen fuel tank is only large enough to supply fuel for barely a few minutes if it is fitted into a car used to give a flashy film promotion of fuel cell technology.

The car in a video to hype the fuelcell technology stops moments after the 2 minute video stops. It's run out of fuel already. To get the number of miles between refills you'd expect from a petrol or diesel powered car, the super cold liquid hydrogen fuel tank would need to be bigger and heavier than the car could fit. Recent developments have brought smaller and lighter fuel tanks, but the problem of fuel storage will not go away.

Then there is the problem of how to make the hydrogen to use in the fuel cells.

> Naturally, no non-nuclear means is known to make terrestrial hydrogen that does not consume considerably more energy than it delivers. Note that commercial hydrogen is nearly always produced

Fuck 'Alternative' Technology! Fuck the 'Alternative' Green Ghetto!

Standing up on this hill, as the sun filters through the trees you occasionally catch the reflection of solar panels on the roofs of the houses beyond the wind farm. The gentle swishing of turbine blades is inaudible here, but the hum of a tractor is just perceptible as is sows next year's bio fuel crop in the fields below . . .

Though the reality of alternative technology providing a "green" and sustainable life for us all in the 21st century may seem a long way off, may seem an almost impossible task of enormous proportions, it is becoming more widely accepted as a necessary step in the progress of our industrial society. It is, however, rarely seen for the sham it is.

The disastrously clichéd picture painted above is incomplete without a quick look behind the scenes. Though minute details of the industrial processes employed are beyond the scope of this article, and frankly do not interest me, even a cursory examination will show that the manufacture of photovoltaic panels, wind gennies and bio fuel production facilities is not a particularly green (or alternative) business. From mineral and metal ore extraction (think open cast, think indigenous land rights, think health and safety) to metal purification (think blast furnace, think slag heaps, think massive energy consumption) to manufacturing (think conveyer belts, think toxic effluents, think wage slavery) to transport (think container ships, think road deaths, think more and more fucking airports) to mass consumer society (think, no don't think, consume), when western industrial society decides it wants something, regardless of the apparently benign nature of the product (or even it's intended use in excusing the excesses of our society), the product has a price attached to it, namely the "concealed drudgery of many and the despoliation of the natural world"[1]

There seem to be many people in the alternative green ghetto who have become engrossed in the provision of power through 'alternative'

[1] John Zerzan 'On the Transition; Postscript to Future Primitive' or on the web here www.insurgentdesire.org.uk

means, usually at festivals and free parties, and who even see this as a form of green activism. Embarrassingly this mostly takes the form of boys playing with their (hi-tech) toys. An unfortunate group caught out by technological determinism. Just because it's possible it doesn't follow that it's a good idea.

Many have been fooled into thinking that this new product of consumer capitalism will further the goals of those seeking sustainability without questioning the use of electricity itself and the innately unsustainable nature of all the industries involved in its consumption.

Although industrial production (of alt-tech gear or otherwise) is inherently unsustainable (surely with just a bit more technology . . .) some products are often justified if they, for instance, allow autonomy or independence to those in struggle, but then the same goes for making use of any of the tools of civilization in order to fight against it. But people tend to consume 'alt tech' as a lazy alternative to using more inventive methods, which are usually more in conflict with the system.

The problem arises around so-called 'ethical' consumption and the quasireligious zeal that surrounds the cult that is alternative-technology. Ethical consumption is steeped in petty moralism and guilt, but rarely challenges consumption itself.

As anarchists we shouldn't look to the marketplace to fulfil our needs — but rather seek to feed off the detritus of civilization whilst attacking the pillars that are its foundation.

What are we doing with all this 'alternative' electricity? Whether it's being fed into the grid or used where it's made (via lead-acid batteries), it is the use of electricity itself that must be questioned, not where it comes from. In the same way that the suggestion that our vehicles could be fuelled by vegetable oil does not question car culture, the cult of electricity is rarely examined. From computers to sound-systems, lightbulbs to fridge-freezers all of these things just add to the devastation of the natural world, and severely limit any chance of salvaging a genuine unmediated human existence.

It would be foolish to forget that a green city is still a city. It comes down to whether you merely want to tinker with the system (however you dress that up in anarcho-leftist rhetoric), creating a green tinged society a la Bookchinite 'Social Ecology') whether your desire is to embark

"I would be a lot more concerned about a Tritium fire twenty miles away than a meltdown at a fission plant". There are also likely to be day-to-day hazards caused by the intense electromagnetic forces used to keep the hydrogen plasma off the torus wall, likely affecting workers' reproductive and central nervous systems and potentially causing leukaemia, if typical of other nonionizing radiation hazards. The same spectacle as occurred at Sellafield — where workers there were warned not to have children — is likely to occur at any future viable fusion plant.

Fourthly, as noted already, both tritium and deuterium are key components of nuclear weapons — indeed, it was Lawrence Livermore's Edward Teller (a.k.a. 'Doctor Strangelove') that first promoted them in the form of the hydrogen bomb, while he was still at Los Alamos — and so represents a proliferation risk, with all the 'security state' ramifications of that. So much for 'fusion for peace', not that anyone has ever pretended anything so patently stupid — and as Karl Jung argued against fission in his Nuclear State three decades ago, a nuclear state is inevitably ultimately also a totalitarian state.

Fifthly, fusion is mega-science feeding a Promethian mega-science mentality, with huge resources diverted into keeping such experts on the hitech gravy train. The CANDU torus (also known as ITEC) cost the Canadian government £14 billion when established in 1992. It is a pure research facility which will never generate a watt of electricity for nonresearch use and, typical of those that have had a living gifted to them, all objections by citizen groups such as Sierra Club Canada have so far arrogantly been waved aside.

Finally, despite the industry hype we'd all be on fusion power by 1980, not a watt of electricity has been generated by fusion for research purposes as well as for non-research ones. Nuclear engineers admit:[7]

> The biggest issue facing DT is the actual breeding of the tritium in the Lithium blanket. It is not a simple problem and may be the death of DT fusion if no practical way of efficiently breeding the tritium and harvesting it quickly without having even minimal losses. This is the part that is the most pessimistic, in my opinion.

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7 ibid.

massive amounts of energy, like the old 'Atoms for Peace' / 'too cheap to meter' codswallop they used to sell us fission back in the 1950s. Needless to say, this is the opposite of the truth.

First off, the isotopes of hydrogen smashed together at super-hot (plasma) temperatures are radioactive. Sure enough, deuterium only has a half-life of 12 years — one reason why its use as a 'doping agent' in US nuclear weapons has quietly rendered most of them obselete — but the free neutrons generated by this process often impact the torus's cladding and not the hydrogen fuel, which really is a long-term waste disposal problem.

Secondly, as well as being radioactive, tritium can cause cancer, birth defects and other such problems. Dealing with tritium emissions incidental to conventional fission reactors, the Conception Group discovered a Health & Welfare Canada (HWC) report admitting:[5]

> a 'statistically significant' correlation of central nervous system (CNS) birth defects with large releases of tritium to air: five Pickering infants with CNS defects (anencephaly, microcephaly, spina bifida with hydrocephalus, and two others whose defect code was not on record) were born in January-July 1978, following the airborne tritium releases of April-October 1977. Medical experts link CNS birth defects to radiation exposure, as found after the atomic bombing of Japan.

Fusion researchers concede this is a problem, but claim they only need a small amount of tritium to initiate neutron emission from the deuterium. Engineers admit, however, that "a tritium inventory of 40 kg" as the minimum required to ensure viability.

Thirdly, as hydrogen is such a small molecule, virtually anything is porous to it, making containment much, much more difficult than for fissionable materials. Hydrogen is highly explosive (witness the Hindenberg!) and will be used in combination with super-high temperatures, making plant safety a big issue. One nuclear engineer frankly stated:[6]

[5] Conception Research, Postal Station "B", Box One, Toronto Ontario, Canada M5T 2T2.
[6] Personal e-communication

upon a project that seeks to dismantle all that curtails a more authentic exitence. Though there are apparently still some anarchists who believe that controlling the means of production would somehow allow the develoment of a libertarian society, it must be realised that the technological system is simply a part of the structure domination that (one would think) anarchists strive to destroy.

Technology is the sum of mediations between us and the natural world and the sum of those separations mediating us from each other. It is all the drudgery and toxicity required to produce and reproduce the stage of hyper-alienation we live in.[2]

It may have become apparent that I am using the terms "technology" and "alternative technology" interchangably, but it should be obvious by now that there can be no reasonable differentiation between them. The notion that technology is neutral and exists independently of social relationships has no basis.

> Technology is not a simple tool which can be used in any way we like. It is a form of social organization, a set of social relations. It has its own laws. If we are to engage in its use, we must accept its authority. The enormous size, complex interconnections and stratification of tasks which make up modern technological systems make authoritarian command necessary and independent, individual decision-making impossible.
> (*Fifth Estate* Quoted from 'The Primitivist Primer' by John Moore).

At the heart of the technological system are the division of labour and specialisation. Resulting from these are dependency. We are held to ransom, dependent on others, childlike in the face of the complex organisation of technological society, alienated from the natural environment.

> Most anarchists recognise that the state, private property, the commodity system, the patriarchal family and organized religion are inherently dominating institutions and systems that need to be

[2] John Zerzan 'Technology' *Future Primitive* CAL Press or on the web here www.insurgentdesire.org.uk/technology.htm

> destroyed if we are to create a world in which we are all free to determine our lives as we see fit. Thus, it is strange that the same understanding is not applied to the industrial technological system.[3]

It appears that what is needed is a seditious mutiny of the technological mindset that seems to be so pervasive even within so called 'alternative' green and radical circles. That 'alternative' technology will fail to avert any of the pitfalls of conventional technological approaches is clear. Therefore its status among many as some form of tool of a future ecological society is grounded in shallow and ill thought out analysis of the current technological society we find ourselves in and the historical forces that brought this about.

> Never before have people been so infantalised, made so dependent on the machine for everything; as the earth rapidly approaches its extinction due to technology, our souls are shrunk and flattened by its pervasive rule. Any sense of wholeness and freedom can only return by the undoing of the massive division of labour at the heart of technological progress. This is the liberatory project in all its depth.[4]

More Alternative Problems

Geothermal Plot

The Shasta, Modoc and Pit River nations peoples have told Calpine corporation and CalEnergy General that they do not want development in the Medicine Lake region.

Two 50 Megawatt plants are proposed. Sitting on the southern edge of the Cascade Mountains, the treeshrouded Lake, the watershed of the

[3] from 'The Machinery of control: A Critical Look at Technology', *Wilful Disobedience* Vol. 3, No. 2

[4] from 'Technology' by John Zerzan from *Future Primitive* CAL Press. Or on the web here www.insurgentdesire.org.uk technology.htm

Sacramento River, is critical to Indians. The mountains are considered sacred.

Around Telephone Flat, the areas are used for vision quests and for the gathering of healing herbs. And there are also women's mountains, where they go to get their power. Over 100 years ago the same tribes were decimated by gold rush miners.

The Death of Rivers

If the James Bay project in Quebec is completed, it will embrace over 30 major dams and 500 dikes. Completed in 1995 LG1 is churning out 1,368 megawatts of electricity. More is added all the time.

The project threatens the way of life of the Cree and the Inuit. The James Bay wetlands and forests are habitat of lynx, black bears, waerfowl, and one of North America's largest caribou herds.

The new complex would take a tumbling, 225-mile-long river and convert much of its length into a series of artificial slack-water lakes. These reservoirs would submerge more than a thousand miles of riverine lands and untamed forests.

Fusion is No Solution: An antidote to the usual, incredible hype

Alternative technology tends to be sold as small / human scale and so decentralisable and autonomous until such time as the 'powers-that-be' actually take it seriously, at which point it becomes a mega-project under centralised expert control. Witness wind power spawning huge 100m high wind farms, with wave power next to get the same treatment — and it's typically those pushing such energy generation as 'alternatives' that get to be the experts 'benevolently' imposing them as soon as the government money starts to come in.

No one could pretend fusion is anything but hi-tech, highly centralised, highly expertise-dependant and demanding huge injections of funding and power, but some still believe it is somehow "clean" and can yield