

Its Not That Easy Being Green

In his eagerness to win the nomination of the Democrat Party and the White House, Senator Obama has promised to "end our dependence on foreign oil in 10 years." While I have no problem with that goal, I think accomplishing it might require doing some of the following:

1. Tap into the enormous oil reserves in ANWR.
2. Allow offshore oil drilling.
3. Access our nation's vast oil-shale deposits.
4. Build more refineries.
5. Build more nuclear power plants.
6. Build more power plants fired by natural gas, coal, and oil.
7. Keep income and capital gains taxes low to encourage investment.
8. Require considerable additional research into global warming before imposing economy-destroying fees and taxes that restrict carbon dioxide emissions.

As you may have noticed, Senator Obama isn't too keen on any of these ideas, although he has started paying lip service to a few of them now that his polls show his popularity leveling off. It seems the junior Senator from Illinois has all his eggs in one basket: one that's colored green, constructed of natural earth fibers, and woven by aging hippies in geodesic domes.

Now, I have nothing against geodesic domes, the color green, or natural earth fibers. (Aging hippies are another story.) But I'm a bit apprehensive about betting our nation's energy future on the rapid development and manufacture of more than 100 million super-clean automobiles that emit no emissions. I have nothing against clean air (I breathe it as often as I can), but I'm also not as naive as I was in my younger days. I recall with some fondness (I was perhaps 11 or 12 years old) working feverishly in the basement of our Chicago home to develop a "perpetual motion machine." More than one person told me it was impossible but, stubborn and confident youth that I was, I borrowed tools from my blacksmith grandfather and set about saving the world from energy shortages. (Well, mostly I was trying to become the youngest millionaire in American history.)

Somewhere along the way I matured a bit and abandoned my miraculous machine, learned that Peter, Paul and Mary made nice harmonies, discovered that Senator Joe McCarthy inspired a commonly-used insult, and found that a '71 Chevy Malibu with a 350 cubic inch V8 and gas at less than a buck a gallon was a lot of fun. But suddenly we are in 2008, gas is a lot more than a buck a gallon, PP & M are still riding that same socialist bound for glory freight train for every capitalist nickel it's worth, the State Department spies outed by McCarthy were, in fact, Soviet spies, and a 350 cubic inch V8 can no longer be found in any GM showroom. Luckily, Senator Obama has ridden in on his natural-foods-only Arabian stallion, promising to save the day and the planet (with Nancy Pelosi's help, of course).

I have a vision of the next New Yorker magazine cover: Obama, Nancy Pelosi, Harry Reid, and Al Gore aim guns at a group of white-coated, bespectacled, pocket-protected engineers in a laboratory, demanding that they, "Invent, damn it, invent!" Through the window of the lab can be seen an angry mob with placards protesting \$6.00 gasoline and demanding alternate sources of energy. The name of the lab, stenciled on the window, is "National Green Fuel Corporation." On a wall is a drawing of a Rube Goldberg-like contraption with the legend, "Perpetual Motion Machine." It's only a vision, but I'd be pleased to see a talented artist make it a reality. Just remember to credit me with the idea; I am a capitalist, of course.

According to a 2006 Department of Transportation study, there are about 250 million automobiles in the United States. About 7.5 million cars were sold in the United States in 2007. Now, let's say production can be ramped up and 10 million cars can be sold per year. Let's further say that all of those cars will require no gasoline, and will run on either hydrogen or electricity from rechargeable batteries. Great, in 25 years we'll all be driving around in those clean cars. But we'll also have to produce a lot of hydrogen for those vehicles, or the electricity to recharge them every night.

"No problem," you say, "because hydrogen is the most abundant element in the universe." Yes, it is... but it doesn't occur in its pure form in nature, it first has to be separated from other elements with which it forms compounds. The most common way to produce hydrogen (accounting for about 95 per cent of all current hydrogen production) is through a process called "steam reforming," which involves separating hydrogen from a gas (typically methane, but also ethane or propane), using steam and a catalyst. But guess what... because methane is a fossil fuel, "greenhouse gas emissions" are a by-product of creating hydrogen. Further, the steam used in the process obviously has to be created by heating water. Doesn't that water get heated through the burning of fossil fuels? In other words, your hydrogen car may run "clean," but making the hydrogen for your car would not please Al Gore and company. (How did he miss that particular inconvenient truth?)

If your home is currently heated by natural gas, it may be possible in the future to install a gadget in your garage that will make hydrogen from that natural gas. Your "filling station" would be in your own garage. But, again, you'd also be producing greenhouse gases whenever you turn on the machine. You can also extract hydrogen directly from water (by passing a current through it), but that takes considerable electricity – which will be in short supply if we don't build more nuclear, gas, and coal-burning power plants. Even if your new car is "green" while you're driving it, the process of creating the hydrogen for that drive will be a different color altogether.

And then there's that little problem with the volatility of hydrogen. (There's a good reason why hydrogen doesn't exist in its pure state in nature.) Gosh knows why more gas stations don't explode, considering the number of drivers who hover over the pump with a lit cigarette dangling from their lips, but explosions may be quite common with hydrogen – which is a lot more volatile than gasoline. (Think "Hindenburg.") Hydrogen also takes up a lot of space, and your car's "gas tank" would have to be as big as an oil

tanker for a decent drive – unless the hydrogen is heavily compressed. But heavily compressed means you'd better have a pretty strong tank, able to withstand the rigors of both day-to-day driving and collisions with other vehicles. As soon as the first explosion shows up on the nightly news, the trial lawyers will be ready with class-action lawsuits to extract tens of millions of dollars from the hydrogen suppliers. (John Edwards is currently out of a job, remember?) Or will Obama, Pelosi, and Reid allow legislation protecting the new industry from liability lawsuits? Not on your trial-lawyers-paid-for-their-campaigns life.

Well, what about the electric car that runs on batteries? Well, you're likely going to want to re-charge it every night. If 250 million cars are plugged in every evening for re-charging, that will certainly mean shortages of electricity. (Recharging an electric car consumes about as much power as watching four plasma televisions.) Where will those new power plants come from, if environmentalists, expensive regulations, and bureaucracy continue to block their construction? Solar and wind power are, of course, welcome to join the mix, but will never be able to supply more than a small fraction of our electrical needs - at least for the next 10 years or so.

When your car runs low on gas today, you need only a few minutes to refill your tank. But when your electric car's batteries drain, you'd better be near an outlet, and prepared to wait hours for the juice you need to get you up and going again. (The motel industry may boom.) And don't forget the unfriendly chemicals that inhabit batteries, or the metal plates in the batteries that don't appear magically but require mining operations to extract from the earth, and the problem of safe disposal of used batteries.

Let's assume that 100 million new electric or hydrogen vehicles can be manufactured for the American market over the next 10 years. How much energy does it require just to build a new car? Doesn't the assembly line run on electricity? Aren't the car's body panels made of metal, which has to be mined? And what about all of the car's plastic parts? That plastic comes from petroleum. Toss in more petroleum to make the tires, more metal for the wheels, and still more petroleum for the synthetic fabrics, and a fair amount of copper for the electrical systems, and you're using a lot of energy just to produce the parts to make the car and to assemble it in the factory.

I'm not suggesting we not develop hydrogen or electric cars. They may prove to be incredibly efficient and clean, despite their obvious, and not-so-obvious, shortcomings. But there is no such thing as a free lunch. Some people seem eager to fork over \$30-\$40,000 for a new hybrid vehicle, in order to save \$150 per month on gas. Well, that may be nice if you have money to burn, but if you have a car that's paid for, that new monthly car payment is going to cost you perhaps three or four times what you save in gas each month. Most Americans are going to say, "I think I'll wait a while until this all gets sorted out or the prices come down." Perhaps Obama, Pelosi, and Reid think everyone has an extra \$600 per month to toss into a car payment, but if they do they're wrong. In the long run an electric or hydrogen car may make sense. In the long run a lot of things make sense but, unlike the federal government, in the short run Americans can't spend what they don't have.

Before election day it might behoove the average American to do a little investigation into what we do with oil besides fuel our cars, trucks, tractors, and construction equipment. Tens of thousands of products come from petroleum, including fertilizers, tires, synthetics, waterproofing, cosmetics, and medicines. Do Obama, Pelosi, and Reid expect Americans to do without all those products? Or do they think they can make them out of wind power and sunlight?

As someone once said to Dustin Hoffman in a movie, "Plastics." Look around your house and office. If you're willing to do without everything that's plastic (which is manufactured with petroleum), go ahead and vote for Obama. As for me, I have a suspicion we may be needing oil for a long time to come...

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