

Title:

Nuclear Energy - The Green Solution

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913

Summary:

Do you ever get the feeling that the environment as well as the current geopolitical situation is reeling out of control from our addiction to oil? Ever wondered what we could do about it?

Keywords:

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Article Body:

The United States with less than 5% of the world's population consumes roughly 25% of the world's energy. Some might argue that this is egregious, while others would say that it is simply a yardstick by which the world's largest economy is measured. But for whatever the reason for our vast consumption of energy, the fact remains that in order to consume you first have to produce. And as most of our energy comes from burning fossil fuels- which wouldn't be too bad except that:

(1) burning vast amounts of fossil fuels in this county alone dumps millions of pounds of earth warming greenhouse gasses into, what appears, is a fragile atmosphere, every day. Just warming up the atmosphere a couple of degrees on average has significant impact. Look no further than last year's hurricane season. The worst on record. And...

(2) let's not forget its close cousin; smog pollution, which adds to respiratory problems and other health conditions, not to mention the visual blight hanging over our cities as well. In addition...

(3) have you filled your tank recently? Paid the heating bill? The cost of all fossil fuels, even coal has increased significantly. As other emerging economies such as China and India vie for ever more limited resources, all bets are that the costs will continue to climb over the long haul. Moreover...

(4) as we import most of our oil nowadays- we are increasingly held hostage to an unstable supply from a number of countries that we, for whatever reasons, are increasingly unpopular with. The end game? If our supply of oil is not first

arbitrarily cut off, as it becomes increasingly scarce the price will rise until our growth is strangled. In either case we will feel impelled to engage in war with other rising powers to secure our supplies.

The bottom line: Fossil fuels are not only hazardous to our health (and the planet's) but may in fact be hazardous to the American way of life.

But if energy is the lifeblood of our economy what are we to do? Wind? Solar? While anything we can do other than consume fossil fuels will help, these sources of energy are relatively diffuse and inconsistent. In other words, their "cost to calorie" ratios are not efficient and they are not always dependable. As James Kunstler points out in his intriguing book *The Long Emergency*, one of our best options out of these dilemmas is to do an "Apollo Project" type effort to develop additional, new nuclear energy capability. As it turns out, it just may be the greenest, viable alternate we have.

The U.S. currently produces about 20% of its electrical power from nuclear power. The advantages are; that there are no greenhouse emissions into the atmosphere, no visual pollution, it is cost relatively cost effective, quiet and we have sufficient supply of uranium here at home for the foreseeable future to provide for a major portion of our energy needs. Historically, at least, the problem with nuclear energy has been primarily two fold. First, the "China Syndrome" problem of a meltdown of a reactor which could release a large amount of radioactivity and second, what do we do with nuclear waste material that has a half-life of over 25,000 years! The perception of these two significant obstacles might doom a new nuclear drive and stand in the way of an energy-independent United States.

However, there are new technologies in this field that, like the cavalry, have come to our rescue- and none too soon. First, there is a new class of nuclear reactors that have their nuclear fuel so structured that they cannot do a melt down. Turn off the cooling to this new nuclear reactor and it only gets a bit hotter. No big deal. Turn the cooling back on and it runs more efficiently. Okay, one down. But what about all that radioactive spent reactor fuel? Let's see if we can put some perspective on it. If you gathered all the spent nuclear fuel in this country under one roof it would fill a typical high school gym. Not too unmanageable. Moreover, the spent fuel is encapsulated in super strong glass beads, which in turn are embedded into hardened concrete inside steel drums. This makes the waste product "transportable" and is designed to withstand the elements for 10,000 years. Nevertheless, even in it's tomb it is still relatively radioactive. Most of these drums are stored in water as radiation cannot penetrate more than about 3 feet of water. However, no one seems anxious to have it in their back yards. A political hot potato to be

sure.

But while our politicians don't have the answer, the earth does. The answer lies in the bottom of the Marianas Trench in the Pacific. It is the deepest place in the ocean (over seven miles) and one of the fastest moving subduction plates on earth. If the drums of waste were placed in the bottom of the trench, they would, within a few hundred years, be swallowed up into the bowels of the earth and blend into the earth's core where heat and pressure (caused in part by radioactive substances contained within the earth) rendered insignificant.

Given the current geopolitical situation, which only seems to be working to our disadvantage, limited resources for cheap fossil fuels, not to mention the environmental impacts we are starting to experience, it is time we take drastic measures to get us off our fossil fuel addiction. Let's hope we are not too late.