

Putting Knowledge Into Action



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Why We Can't Grow Our Way Out of Energy Dependence

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The new Congress has raised the expectation bar, unfortunately, with the same fuzzy thinking. Quick fix artists are back. Ethanol is not a panacea for energy security or energy dependence. Raising the Renewable Fuel Standard (RFS) to 15 billion gallons gives us an E10 world, and not much energy savings or environmental benefit. Corn-based ethanol is highly inefficient and does little to help the United States fix its habit to foreign oil. Food for fuels is another problem area both ethically and economically.

The other major impediment to a sanguine energy and environmental policy is the problem requires a long-term strategy, and not a coalition of fast buck artists and lobbyists. The nation needs to take a deep breath and realize that to get into this energy addiction (it's not just oil) requires a total re-think of how we use energy and how it impacts the environment. Each solution will take time and lots of money. The \$4 billion amount of spending by energy companies on annual R&D pales with what is really needed (U.S. automobile manufacturers spend \$30 billion, by comparison). We are talking about a multi-hundred billion dollar investment that is called energy infrastructure. It's not a sexy concept, but is the right way to look at the problem.

We need to look past the quick photo opportunity and ribbon cutting and get down to what my father called "heavy lifting." We need to rebuild America's aging infrastructure in energy, telecommunications and water. We need to educate consumers that energy efficiency does not mean sacrifice, but actually has paybacks and return on investment. And we don't need to get big government in the middle of boondoggles and cost overruns. This requires engineering solutions to build out a cleaner, greener America where everyone benefits from better health and reduced energy costs. That's what I call a true "win-win," but it requires the acknowledgement that this task is going to take decades. Changing the automobile fleet to plug and play hybrids, the only way to really get savings and real environmental benefits, will take 10 to 12 years at a minimum. "Hydrogen highways" notwithstanding, it's going to be based on gasoline and diesel.

Except this time we are going to use a lot less of it; Ethanol, hydrogen and the other alternative fuels will fill out that platform of “fuels of the future.” Charge up those cars at night during off peak rates. The economists can do the numbers, but I am sure that they make the cut.

It's the Portfolio Approach, Stupid

Secondly, we have to get real about nuclear and coal. 25 percent renewables by 2025 is very doable, and could be exceeded, but the realization must be made that fossil fuels (oil, gas and coal) are still going to be consumed in 20 and 30 years. It makes sense to focus on coal as a clean fuel alternative producing lower emissions and co-production of liquids such as diesel fuel or ethanol (It's all hydrocarbon molecules being rearranged), and marrying the carbon stream to sequestration.

Then, we have to get serious about significant greenhouse gas reductions, and that means a revisiting of nuclear power. I won't go into the mining and waste disposal issues here, which are very real. The 103 nuke plants need to be expanded to better technology with standardized designs. Nuclear power electricity does not make emissions. So, its part of any solutions package.

Greater Standards on Green Buildings

Finally, we have to accept that most of our buildings are highly inefficient (sometimes three times less efficient than their European counterparts). So, we need to invest in more green building technology for both new construction and the larger existing infrastructure. Lighting contributes heavily to commercial building load and so does pcs, laser printer, fax machines, servers, etc. We need to focus on the building envelope with more energy efficient design and applications of better and smarter energy management technologies.

New Year Beckons New Thinking on This Problem

It's a new year and a new focus on our twin problems of energy and environment. I would add a third, job security. The United States is now under globalization pressures and competition will come from everyone, so why not frame the debate in terms of growing new businesses (pun intended) for energy storage, efficiency, transport, and comfort. These investments will create jobs for Americans.

What I now see happening is that the true energy professionals are coming into the space, mostly as private equity funds for clean tech and clean energy alternative. These are established teams that have built energy projects all over this country and the world. The know-how is coming into place. Big energy will be the exit strategies and buy these new technology upstarts. We have entered the bottom of the first inning. This is a long game. It is survival of the energy fittest, and we need to start now!

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