Energy Myths and Current Realities

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The American public and much of the industrialized world, is under-informed about energy. A few energy myths:

- The U.S. can be energy independent in the next 50 years.
- "Renewable energy" can reduce dependence on fossil fuels significantly in the next 25 years.
- The economy will adapt easily to a rapid, federally imposed energy transition.
- The environment will survive a major recession.
- Energy efficiency and savings (alone) will solve the problem.
- There is plenty of low-cost (conventional) oil ready to be found.
- "Big Oil" controls the price of oil and gasoline and makes "obscene" profits.
- Cutting oil imports will stabilize and lower gasoline prices.
- We are running out of fossil energy.
- All coal is dirty.
- The cost of energy is increasing.

A few energy realities:

- America is energy interdependent for the foreseeable future—and that reality is not a bad thing; policies should be made accordingly. Talk about energy interdependence is misleading.
- Some sources of motion (wind and water), light (solar), and fuel (corn) seem "continuous" on a human time scale, but perhaps only the sun qualifies as "renewable."
- Combined wind, solar, and geothermal supply around 1% of the world's energy; add hydro (dams) and biomass (wood and emerging biofuels), and this number approaches 10%. The cost to transition the transportation infrastructure to a nonliquid form is in the trillions of dollars and will take many decades, even if we started a full-scale commitment today.
- Big Oil companies—combined—control less than 10% of the world's conventional oil reserves; as a result, they don't control much of anything, including gasoline price.
- Big Oil companies, even in the past few "obscene-profit years," have typically made less than 15% profit annually; for every year of solid profit in the past 30 years, there have been as many or more years of low profit or loss with associated layoffs and continued mergers.
- The world has abundant reserves of coal; converting it into clean electricity by gasification and CO_2 sequestration will make electricity more expensive, and the consumer will pay for that. China will build hundreds of pulverized coal plants in the next few years; China must participate in any global strategy for carbon reduction.
- The world has considerable shale oil, oil sand, and unconventional natural gas resources; these unconventional forms of oil and natural gas are more expensive to extract because they are harder to access than "easy oil" and require greater environmental protection (overall a good thing) and technology.
- Since the dawn of commodity energy, people have made energy choices largely on the basis of price, and there is little sign that it will change, regardless of how we respond to clean-energy polls.
- Combustion of any fuel produces emissions; everyone who drives a car, turns on a light, or heats and cools a home is most likely combusting fuel. Emissions standards have and should continue to improve dramatically. Oil- and gas-drilling practices and coal-mining practices have improved and can improve further. Katrina and Rita were an environmental success story.

- We can and must become more efficient in how we use and save energy. But global demand will continue to grow; there are simply too many people consuming and modernizing to solve it all with efficiency and conservation alone.

During the next 50 years, we will most likely transition from cars that run on liquid fuels to cars that run on something else—perhaps electricity or hydrogen. Research on solar energy makes eminent sense and should be embraced; it will be needed later this century. Nuclear energy is a viable, scalable, clean alternative for power generation. Wind makes sense as a regional supplement. Biofuels need work; the cost in soil, water, and energy to convert a carbohydrate to a hydrocarbon is great. Other sources—geothermal, tidal, and hydro—are regional supplements. Policy that attempts to elicit a desired energy portfolio response—and runs counter to science, technology, and economic realities—will probably cause more harm than good.