Brainstorm: Alternative Fuels Part 2

What's the best way to advance alternative energy research? With government grants, free market solutions, or something else?

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At this point in world history, the question is not really how do we advance or accelerate research into alternative energy sources, since universities around the world are engaged in that research, and have been for years. Instead, the real trillion-dollar-question is, how do we get industry to take the best and most promising results of that research and turn it into viable products that can begin to alleviate some of our insatiable dependence upon petroleum-based energy?

Considering when (and why) Ayn Rand developed her Objectivist philosophy, it was and still is, a bit simplistic. Therefore, a strict deployment of it—especially under the shadow of Keynesian government meddling—results in some undesirable side-affects, since unbridled greed within pseudo-free markets often amplifies the boom-and-bust cycles that economic interventionism produces. However, the basic premise of Rand's ideology has yet to be disproven, since the best motivator of individual entrepreneurs is still rational self-interest.

The next pragmatic question that came to my mind was, will the present atmosphere of government-mandated, regulation of anything and everything that might possibly impact our environment allow entrepreneurs enough freedom to do what needs to be done to make alternative energy sources more economically viable than petroleum-based products? At the moment, this seems highly unlikely.

Unfortunately, I suspect that the hard work of the 'alternative energy revolution' will end up being done, like much of the inventiveness of the late 19th and the early 20th centuries, by self-funded pioneers, inside their own garages, beneath the radar of the watching, scientific world. Until someone discovers a better motive than that of the what's-in-it for-me factor, or the stifling epidemic of regulation-itis eases some, I see no better channel for the creative energy required to solve the problems that prevent

alternative energy from displacing petroleum, to flow unrestricted within.

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With normal supply and demand, the free market can generate the levels of interest required to fund alternative energy research. Unfortunately, energy, as a commodity, has become a political and financial hot potato. Compare the charts of oil prices, or renewable energy stocks and you will find that they track well with the movement of the proverbial potato. Research requires a steady hand while the energy markets have become the playground of financial speculators and hype. This level of volatility creates both social and national security concerns that demand the advancement of alternative energy, but at the same time worries a free market investor. Just ask T. Boone Pickens.

Alternative energy opportunities are both diverse and complex. New nano-technologies may improve the performance of ultracapacitors and other energy storage devices. Generation technologies, including wind, solar, geothermal and a variety of new entrants need investment that will allow them to achieve commercial viability. Finally, the definition, design and implementation of a smart grid system will be required to transport power to the user. The potential solutions for all these alternative energy opportunities will require massive and parallel funding.

Visionary companies and investors continue to see profit opportunities. According to Ernst & Young, venture capital investment in alternative energy soared 73 percent during the second quarter of this year. However, the magnitude of the overall effort will require a combination of government grants, incentives and low interest loans. To maximize the effect of limited financial resources, a combination of government and private efforts will need to monitor, organize and prioritize promising technologies and promote standards for energy generation, storage and transmission research programs. As long as oil remains relatively available, socially acceptable and subject to price manipulation, government support will need to substitute for free market pressure.

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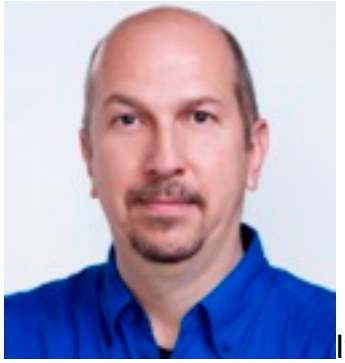

It is said that crisis drives people to action – at this point in time we haven't quite reached a crisis stage on our energy supply, but it has caught the public eye over the last few years due to higher energy prices. Whenever there's a squeeze on our energy supply, new initiatives are announced that will turn the tides and once again ensure a secure energy supply… until the availability of our current energy sources (and the prices paid) return to a familiar level.

Historians will look back at the last two centuries as "The Carbon Age" where man extracted energy from carbon based sources. So what will it take to push our society to abandon carbon based sources forever and embrace alternative energy sources? I see two options… a united, committed alliance of nations to drive development of alternative sources or a sudden decline in available carbon sources. The latter is a worse case scenario which could result in global conflicts, power outages and economic catastrophe.

The best way to drive change is to incentivize individuals and companies to find alternatives. Something like the X-Prize for energy would be a cool idea. Government support and incentives (tax or otherwise) will also drive people to research and look for solutions. Innovation is driven by need – we see the need today, but require funding to drive the ideas to fruition. This funding can either be private, public or government supplied, but without it, we will sit and wait for our carbon energy sources to dry up before taking action.

Beyond the research and development is providing the incentive to use alternative sources. Obviously, if gasoline is inexpensive, people will continue to drive their existing cars without the need for change. When the cost of energy increases, pressure is placed on the suppliers and the consumers to begin to look for alternatives. The sudden rise in gasoline prices in 2008 drove the sales of hybrid-electric vehicles. Possible taxes on fuel (as much as that is unpopular) that fund alternative research would be another area that provides both incentive and pressure to change.

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To advance alternative energy, private companies need to control the research and move the industry forward with products that yield good ROIs. If a small company wants to succeed, it must innovate. Innovation takes research. The government should extend more flexible grants to smaller companies and let the company create the technology, manufacture it and sell it.

Working with academia can be frustrating for private companies due to the lack of focus and increased timelines. If the government wants to assist, it should sponsor technology incubation centers with specific technology goals, which are run by private industry and seeded with government funding. Universities would be forced to compete with the private industries, providing cheaper and faster research to the incubation centers. The best and most economically viable technology will rise to the top and spinout into manufacturing. This allows room in the incubator center for the next great technology to repeat the cycle and create additional revenues and jobs immediately.

See Part 1 [5]

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