

The Best the 1800's had to Offer

■ Rodney Andrews

CAER Director

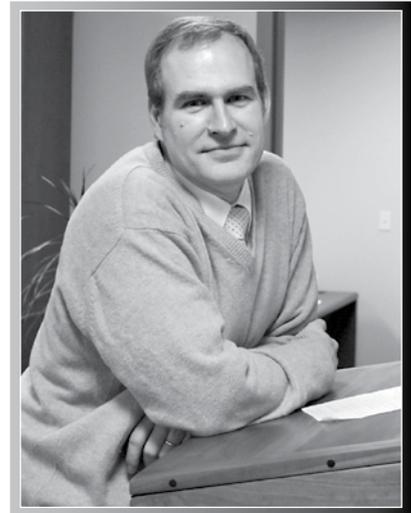
Someday I will actually get around to writing the book I've fiddled with in my mind for the last few years. The working title is "Stupid Energy Tricks"; this will be a serious analysis of our current national energy policy. The general outline is straightforward in that I want to look at past accomplishments in implementing successful and unsuccessful energy policies both in the US and internationally, and compare that to the current trend in the US. You know, where we reinvent the entire investment portfolio for energy R&D on a recurring biennial cycle. And just to make it especially baffling to the rationally minded amongst us, we do so in a way that shifts the majority of funding from one hot topic flavor-of-the-month to the next, leaving prior investments and years of work in the dust while we start all over, seemingly oblivious to the lessons of the past.

As Director of CAER I certainly am grateful for the investments made with stimulus funding. As an engineer and energy technologist, I do see significant issues with what appears to be a lack of understanding of the magnitude of the hurdles we face as a country meeting current and future energy needs, let alone doing so with a smaller environmental footprint. The big influx of funding to energy R&D was desperately needed, but observationally, I've heard it described as putting 80% of the funding into at best 10% of the energy supply. I've also heard it described as a fantastic way to create a slew of green jobs and new business opportunities, provided we don't worry too much about what the final cost for energy to the consumer will be.

I blame some of that on scale. When the comparison is that we need "an Apollo Program for Energy" the first thing that comes to my mind is, "Wait a minute. That's not nearly enough time or money." Modernizing the electrical grid, reworking our natural gas infrastructure, rebuilding our refining capacity, let alone shifting away from

imported petroleum and reducing the inefficiencies in our use of fossil fuels will require a new industrial revolution, a complete rework of our infrastructure and economy, not something as simple as hurtling someone on a rocket to the moon.

If that went wrong, the Soviet's got bragging rights. If we start losing our access to energy, we lose our society and civilization. Personally, I am rather fond of heat, light, food, and modern medical care.



Fossil energy offers the United States energy security and independence. It can drive our economy and buy us time to develop newer, cleaner technologies and develop a more efficient, renewables-integrated infrastructure.

Perhaps this topic percolated up to my dominate personality's annual "write something" space due to a recent editorial in my favorite local news source, the one that tends to think green is great and anything else is barbarically antiquated. It could be because I don't like it being widely inferred that I'm a Luddite¹, but was mostly because the author opined that the University doing research on coal was the best the 1800's had to offer. We better hope it's true, as that was the century where science and technology finally allowed humanity to grow food and produce energy to meet the needs of a modern and expanding civilization. Yes, we still have famine, pestilence and warfare, but how much more catastrophic would these be without modern technology, but with our current global population? Finding ways to use the resources we do have, including coal, to meet the energy demands of the future is going to be a challenge of unprecedented scale, akin to the shift from hunter-gatherer to industrial agribusiness. And we seem to have set off to do this with the idea that

we should abandon everything that has worked in the past, simply because 'new' must be better. Perhaps we need to consider that we haven't stopped eating almonds because we domesticated the maize plant; we just grow them in California and use diesel fuel to move them around the world.

We can learn a lot from past examples. During a previous warming period, around 980 AD, Norse colonists established a vibrant colony in southern Greenland. They enjoyed a mild climate and an abundance of food and forage. The population expanded for nearly 500 years, and then (sometime after 1400) the climate changed and this population died out. For lack of a more poetic description, they ended sitting in the dark and starving to death.

How this is relevant to energy policy lies in what happened to their competitors. Around 1200 AD, the Inuit also moved into Greenland, eventually establishing a flourishing civilization that has lasted to the present day. What they did differently in dealing with climate change is relevant to the



UNIVERSITY OF KENTUCKY

Center for Applied Energy Research
2540 Research Park Drive
University of Kentucky
Lexington, Kentucky 40511-8479

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issues we face today in our national energy supply. As climate changed, and traditional game became scarce, the Inuit shifted to a diet of fish. The Norse, however, simply refused to eat them. No one really knows why these otherwise tough and resourceful people could be surrounded by food and refuse to eat it, but we should learn from their fate.

Fossil energy offers the United States energy security and independence. It can drive our economy and buy us time to develop newer, cleaner technologies and develop a more efficient, renewables-integrated infrastructure. Yet, it is currently as popular as a smelly fish in a room full of angry Vikings. This knee-jerk repugnance is unfortunate at best, and economy killing at worst. We have an abundance of these valuable resources, but nationally seem unwilling to face the unpopular truth that we need them for the foreseeable future. The methods to allow extraction with a lighter environmental footprint are being developed and tested. Carbon capture

and utilization technologies are in development that not only capture the byproduct greenhouse gases, but convert them into useful products and a greater abundance of energy. These take time and a willingness to stick with our investments well beyond the 2-yr political horizon. We do not have a viable replacement for fossil fuels in the near term, and we need the time and the R&D to make it more palatable to use.

But like I said, I'm a big fan of heat, light, and food.

^The Luddite aspersion is more ironic than anything, as I refuse to read the news in paper format. I much prefer electronic readers. I don't like all the wasted paper, energy and trash generated by getting a rolled up (and often soggy) cellulosic mass that tends to bead directly from driveway to recycle bin. If anyone knows how to also get the "special circulars" to stop, let me know.