



## So - do we have answers?

Posted by [Heading Out](#) on May 30, 2008 - 10:00am

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“Alright!” says the Actress, “You’ve convinced me we have a problem with oil. So what’s the answer?” Well, actually I didn’t. Eloquent and persuasive though I might like to think that I am, what really convinced her was the price she had to pay to fill the gas tank in her car. And it is that way with most of the world. We can talk about the causes, and explain why the situation won’t get better, with graphs and projections and calculations, and most folk will, under the cynical guidance of most of the press, merely look for someone to blame. Oh, and there had better be an answer, pretty quick.

In my [last post](#) I tried to show that new solutions take time, more time than I believe that we have available. And because of this, if we are going to get through this evolving period we are largely going to be stuck with the solutions that are already either being introduced or are close to large-scale implementation. Though that is one of the things I tried to allude to in the [earlier post](#) about Camry mileage. The scale of the difference between likely supply and demand at a decent price is going to get quite large. If a solution does not provide supply levels that measure in millions of barrels a day (or significant fractions thereof) then it is not going to have enough impact to make much difference in the medium term.

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That doesn’t mean that we should stop work on fusion, after all, even to the next generation to be born, it is likely to be “a potential solution with the greatest promise.” But rather that we have to put more of an emphasis on finding ways to do more with what we have, in the way of solutions and resources. And that includes finding better and more efficient ways of getting oil out of the ground. It is where part of the immediate problem is most evident, and though it will not provide a long term solution, it can perhaps ease the pain over the next decade.

But even here there is likely not enough research being done on innovative ideas. I have, in a [much earlier post](#) quoted Michael Economides and Ronald Oligney from [The Color of Oil](#) in which they point out that the petroleum industry has been sadly lacking in funding research.

Many unique features distinguish the technology of the petroleum industry. First, there is little doubt that technology is crucial, and that deployment and integration of technology is essential to the industry's success. Yet, this technology is highly diversified and applied to industry segments with different needs. The scope is wide. Seismic exploration and processing, enhanced oil recovery and the construction of deepwater production facilities have little in common.

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Why is it, then that the petroleum industry, so technically dependent, is the industry with the

smallest R & D spending? The healthcare sector leads all industries, with 11% of sales going into R&D; the electrical and electronics industry spends 5.5%, and the chemical industry spends 4.1%. In this light, the petroleum industry's R & D spending of less than 0.5% of sales is striking.

It is not just the petroleum industry, the mining industry is equally lacking in funding research into innovative, and more effective ways of producing the minerals, including coal, that we need. If there is one thing that Congress could perhaps ask, it is why there is this lack of investment. So far it seems that there has been little investment other than in public relations.

Now, to be fair to them, I did partially answer that question in a [comment](#) I appended to that original post.

Grin - a history lesson (because I was there) - Scene Park City, Utah.

On the front row, representatives of all the big oil companies. We are meeting to talk about drilling research. Says the rep of a European oil company – “Why are the Feds doing research into drilling technology - don't they know that we are working on this?”

Says the rep of an oil company located in Houston – “What is your drilling R & D budget?”

European "\$x million."

Houston guy " This new Administration that they are forming has a budget in the billions."

European "Oh, I guess if they are going to fund it there is no reason for us to."

And so they largely stopped, but ERDA went on to fund other things instead of drilling research and, in time, became the Department of Energy.

Sic transit . . .

And then, in time, the Department of Energy reduced their programs, more and more, and less and less got done . . . .

And, as for the research in mining, well that was carried out by the U.S. Bureau of Mines. Among other things they pioneered [coal bed methane \(CBM\) technology](#) – this from 1978

The Bureau of Mines is conducting research to determine the effectiveness of long holes in degasifying an area of the Upper Split of the Lower Sunnyside coalbed at Kaiser Steel Co.'s Sunnyside No. 1 mine. These holes were drilled from the two outside entries of a section that was closed to mining because of excessive methane emissions. Two holes drilled to 430 and 450 feet produced initial gas flows of 160,000 and 127,000 cfd, respectively . Sixteen days after the completion of the second hole, the total gas production declined to just over 144,000 cfd.

In 9 months of degasification, over 35 MMcf of commercial-quality gas has been removed from the coalbed. The combined gas flows declined to 106,000 cfd in the 9-month period. The two holes have reduced face emissions by about 40%.

They also did some of the early work on horizontal wells, developed from a vertical bore, but those reports (such as USBM RI 8640) don't appear available electronically. What happened to them? [In March 1996](#) the Bureau of Mines was closed. It seems as though there is more than one dropped ball rolling around the floor.

As I mentioned in my last post I am an avid reader of science fiction and fantasy, as well as books on energy and related matters – sometimes it is hard to tell which is which (grin). But I remember a story (though not title or author) in which the protagonist noted, about a new

breakthrough, that of the scientists that investigated it, at least half would be trying to prove that it didn't work.

I bring that up because, as ideas develop towards being solutions to the fuel supply needs that we face, they invariably encounter problems. Ethanol from corn is likely one such, there are high energy input requirements and water demands that are raising voices of concern. But among the [2007 highest yields \(pdf\)](#) was Sam Santini, who raised 313 bu/acre without irrigation. Some of the problems that are given as road-stoppers to application may only be hurdles that have to be crossed, and in such cases an overly negative climate really doesn't help.

At the moment it still seems to me that each of us has his/her favorite solution, and in seeking to push its charms, feels it is still necessary to denigrate the chances of the others. (And yes, in that regard I will admit to a personal preference for algae). The reality is that we are going to need all the help that we can get, and no solution is going to be universal – there is no silver bullet. It is hard to see solar being very useful, for example, in Alaska in December. But, as I think Matt Simmons said, there are lots of silver bb's out there. We need to be encouraging them all, because we will need them all. The scale of the problem that is developing, and the speed with which it will arrive, is largely not comprehended. And, unfortunately, at present, I don't see that we have enough grasp on the questions that must be asked, if we are to find those answers, let alone knowing what those answers are.



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