The Oil Drum
DISCUSSIONS ABOUT ENERGY AND OUR FUTURE

The Marie Antoinette Syndrome

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A short while ago I wrote about my concerns that, with a growing drum roll of articles decrying the use of coal, we might find ourselves short of power, at a time when we have a real need. The tone of articles written about the mining industry are virtually all negative, with very few counter-arguments being made to demur at the emotive tone of the language used in writing about this subject. The thought returned today as I read the article in the Guardian that Leanan had highlighted in Wednesday's Drumbeat. The piece, by George Monbiot, bemoans the creation of a new surface mine in Wales.

> As I watched the machine scraping away the first buckets of soil, one thought kept clanging through my head: "If this is allowed to happen, we might as well give up now." It didn't look like much: just a yellow digger and a couple of trucks taking the earth away. But in a secure compound behind me were the heaviest beasts I have ever seen - 1,300 horsepower or more - lined up and ready to start digging one of the largest opencast coal mines in Europe. In Romania perhaps? The Czech Republic? No, on a hilltop in south Wales.

I am thinking of calling this the Marie Antoinette Syndrome – she of the "let them eat cake," quotation. Because there is a reality to life that seems to be beyond the comprehension of writers of this ilk. George Monbiot refers to the opening of the mine as being a sign of a "re-entry into the coal age," but we never left it. Coal has been, and is, used extensively around the world as a fuel source, and in the United States produces more than half the electricity consumed. It is one of the cheapest (in straight dollars per kWh) sources of power for a utility. Solar is currently about five times as expensive as coal power. Further the coal in place in the UK, even if not at the moment a reserve, still totals more than 45 billion tons .

We are very rapidly approaching the point where world oil production will likely peak and then start to decline. The quantities of fuel that will have to be found to replace this gap are not likely to be found in the occasional wind farm, dotted over the landscape, nor in solar panels on the roofs of very profitable corporations. The alternatives to letting the populace "freeze in the dark" are starkly limited. A significant amount of that power will likely have to come from coal, for a number of different reasons.

Partially it is because it is a technology already in place and functioning, one that is not that difficult to scale up to meet increased need (China being an illustrative example). Partially it is

because there is little else on the horizon that has a chance of meeting the need, at an affordable cost.

Oops, there I go touching hot buttons again. But consider this, politicians do not get elected because they voted to double your electric bill. There is great concern when bills rise by 10-20%, consider if this was multiplied by a factor of ten to change the mix to more solar, for example. (The cake analogy). It is not a practical reality. Yet politicians with a degree of social responsibility recognize that they must do something. I have no mandate to defend the British Government, nor any great wish to, but it does seem fair to note that they have been working to find future supplies of energy from a variety of sources to meet anticipated future needs. In this context they cannot just wear rosy glasses but must recognize certain fundamental truths. One of these is that coal is a part of the energy future.

So now we come to the second part of the discussion – why surface mine the coal? The new surface mine is near Merthyr Tydfil, in the South Wales coal field, where there was, for many years a large underground mining tradition. Part of the new mine will, in the process, apparently clean up some of the mess left (waste heaps etc) from some of that era. The answer also addresses part of the question as to why mountain top mining is allowed in the United States. The first part of the answer is that we need the coal (see above). The second part of the answer is that surface mining is a lot cheaper (in terms of safety as well as dollar cost) than underground mining. Now there is an interim cost, in that while the mine is in operation it looks pretty ugly (you can for example watch the video that accompanied a recent Washington Post article here. What that video did not show, nor did any of the others I ran quickly through (Google searching "Mountain top mining You tube") was the condition of the land after the mining company has finished land reclamation. Comments about "moonscape" relate to what it looks like during mining, it turns out to be quite hard to find photos of reclaimed land in a quick search, but there are some here that suggest that it doesn't end up in the same shape as it is in while mining is going on, but can be more useful and (since it also includes golf courses) not wholly unattractive.

Now it could be that the coal could be mined in a less obtrusive way – underground mining is less obvious, and was the traditional way of mining in much of West Virginia and Wales. But the waste has still to be stored somewhere, and the process is more costly than surface mining in a number of ways. And so, you might say, why don't we develop new technology to help solve these issues.

Well here's the rub, there are now only 13 universities in the United States that teach mining, and in total, as a recent article (ppt file) showed, there are 69 faculty of whom 29 are anticipated to being going to retire in the near future. There is one (1) faculty member under the age of 30. As demand for students rise (and enrollments are increasing) the amount of time for research declines (not that there was ever much money to fund it in the first place). So where are these new methods of mining going to come from? The last time this happened the Government gave one of the leading engineering/university groups in the US a large chunk of money to find the answer (they were not a mining school). they reckoned, I suppose, that if you could work out how to put a man on the moon, that mining coal would be a piece of cake. It turned out about the way you might have expected, right Dave?

Finding new technologies has not been an imperative for about 25 years or so, and so there is not a whole lot of innovation going around. And there is still the cost issue – how much extra is the general public going to be willing to pay on their electric bill (since that is where it ends up) to develop new methods and then pay for their use. The historic answer, which has driven the steps to find the cheapest way to produce coal, is not much!

There is also another worry which I thought I might mention, since as Aniya has noted, my

reading gets a bit broader about the time I go to Energy Conferences. (And we have one coming up next week). There was an article on ABC News this week about the growing concerns for Atlanta as it faces the fourth year of a drought. There are an increasing number of problems that the metropolis faces and it is approaching a point where there will not be enough water, period, without a long and continuous period of major rain. So, being of that frame of mind, I looked to see what the weather was like back in the Medieval Warming Period and while it was apparently still warmer then up in Newfoundland than it is now, the prospects for further south are not promising. For example in the Hudson Valley the drought lasted about 500 years.

> Aside from views of cattails and blackbirds, the marshes in the lower Hudson Valley near New York City offer an amazingly detailed history of the area's climate. Sediment layers from a tidal marsh in the Hudson River Estuary have preserved pollen from plants, seeds, and other materials. These past remnants allowed researchers from Columbia University, New York, N.Y. and NASA to see evidence of a 500 year drought from 800 A.D. to 1300 A.D., the passing of the Little Ice Age and the impacts of European settlers. . . . . From the pollen record found in sediments in Piermont Marsh of the lower Hudson Valley, a Medieval Warm period was evident from 800 to 1300 A.D. Researchers know this from the striking increases in both charcoal, a sign of dry vegetation and fires, and pollen from pine and hickory trees. Prior to this warming spell, there were more oaks, which prefer a wetter climate.

So if we are heading back into that cycle then perhaps water issues may well become evident within the next few years at about the same time as we are looking at finding alternatives to oil, which could make life extremely interesting, as they say.