



Electrical Supply: Time, Scale, and the Need for Decision in Planning Future Power Plants

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As the first gentle snowflakes of winter settled on the windscreen of my car I was reminded, yet again, of the turning of the seasons and our need for power to keep us warm through the coming months. Last week I commented on how jobs might be created as the pattern of power supply begins to change, particularly with the incentives that might be a part of a new initiative. Two factors often get understated, however, in the current anticipation of the changes that a new Administration may bring. The first of these is the time that it will take to get any decision implemented at a scale that can be meaningful, and the second is the scale itself of the problem that now faces us.

It was a recognition of the many years that it will take for any new technology to have an impact on supply that was a critical component of the report written by [Robert Hirsch, Robert Bezdek and Robert Wendling](#). Although their report largely focused on the coming shortage of liquid fuels, the impact of the [EPA Appeals Board](#) on the timing of new power plant construction, taken with the upcoming decline in natural gas production, raises additional concerns that adequate future electrical supplies may also be at risk. The Hirsch report was written in 2005, and their conclusion was that the drop in conventional liquid fuels supply could be made up by (1) Improved Oil Recovery, (2) increased production from the heavy oil sands such as those in Canada and Venezuela, (3) coal liquefaction and (4) fuels from the conversion of natural gas. Even from those relatively conventional sources they anticipated that it would take 10 to 20 years to build up the needed capacity.

Just recently it has been suggested by [one of those authors](#) that the urgency of this situation be disregarded, since raising concerns might cause more damage than good. Again, that argument ignores the reality of the need for timely action and the future impact of a current failure to address the issue. As someone who talks about Peak Oil at service clubs and to students, the depth of the public ignorance of the true facts, even in the face of long-term rising fuel prices, is overwhelming, and the consequences of inaction largely unknown. One cannot realistically anticipate being able to legislate the new technology that will be needed, but that is not yet invented. If new technology is not now encouraged, then it will not be available when needed. Let me explain my concerns in a little more detail.

There are, at present, [about a hundred](#) coal-fired power station applications in process of permitting, prior to construction. Selecting just one of them at random, [the American Municipal Power Generating Station](#) outside of Columbus, Ohio was conceived in the year 2000, by the local

power company. It is intended to be a [1,000 megawatt plant \(pdf\)](#) that will provide power to 500,000 customers in the Columbus area. It has just obtained the air quality permit, and is currently on schedule to start delivering power by the [end of 2013 \(pdf\)](#).

How will the EPA ruling affect this schedule? I have no idea – and I suspect that the utility company doesn't either. And that is the point. Until they can be sure that the permits and processes are complete, the power company cannot proceed with the current plans, since new interpretation of the legislation, or new legislation itself, may cause costly modifications to the construction. The power plant construction will therefore likely be delayed, at the very least for the time it takes for the Bonanza ruling to be clarified in regard to impact on other power station permits. More likely the new ruling will lead to a new requirement for hearings on the air quality permitting, which will delay construction perhaps an additional year, providing that no additional design work is also needed at the plant to overcome new regulations.

Now the Sierra Club has gleefully [touted](#) their success, and their perception of the message it sends:

”Instead of pouring good money after bad trying to fix old coal technology, investors should be looking to wind, solar and energy efficiency technologies that are going to power the economy, create jobs, and help the climate recover,” said Nilles (Director of the Sierra Club's National Coal Campaign).

At present Ohio has 7 megawatts of wind generating power. The United States has a total of just over 21,000 Megawatts in operation and [8,500 Megawatts](#) under construction. As best as I can determine Ohio is not particularly suited to providing the inhabitants of Columbus [with wind energy](#) of the scale needed to replace the power plant. If one looks to solar power, the installations in Ohio to date seem small, one such [cost \\$41,500 for a house](#) although with the aid of grants the owner was only out of pocket \$21,500. This gave him a payback period of 10 – 12 years.

Somehow I don't see the 500,000 folk that were going to be supplied by the coal-fired station being that excited or that able to make such an investment. And so the message from the Sierra Club to the residents of Columbus, Ohio might be interpreted to be “Freeze in the Dark, and be grateful that we're looking out for your interests.” And remember that there are another 99 power stations out there, who similarly are now trying to decide what the ruling requires, and putting their plans on hold until such time - potentially over a year – that the new requirements become clear.

Which brings me back to basic problems of trying to get the country to provide enough energy supply for the future. The declining resource base that we are currently discussing in the ongoing review of the IEA report is a reality. But while the shortages of oil and natural gas will impact the cost of living and the strength of the economy during the incoming Administration, it is already too late for them to be able to do much to control such supply positively for the duration of the first term. (It is always possible to do things that have a negative impact).

One cannot legislate technology that does not exist, though one can encourage and fertilize the ground it can grow in. Without those new ideas, and with the supply sources that the Hirsch report relied on not getting that much encouragement at the moment, one can anticipate that the next four years may get steadily worse from the energy supply point of view. In such a case, then it may well be that the new Administration may not get a second term. Also, it might be borne in mind, for those who think that future wars may only be induced [by climate change](#), that history shows that there has been more than one war started over oil.

It may be a reflection of the saying, “Be careful what you wish for, you may receive it,” but the debate over how to heat, cool and power America has likely now moved into a new arena. The situation is similar to that of the United Kingdom, with its creation of a Ministry of [Energy and Climate Change](#), which must now decide whether to continue the construction at the [Kingsnorth](#) power station. The United Kingdom has legislation in place that will limit the production of power from the existing plant, and requires that it will close by [2015 \(pdf\)](#). It is a continuing target for [environmental activists](#). The power levels there are half-as-large-again as the plant near Columbus, but the underlying struggle over the energy future seems similar. One of the primary goals of politicians is to get re-elected, and it will be interesting to see how that factors into these decisions, particularly if the winter(s) are a little harsher than they have been.



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