IT'S THE FUEL, STUPID

THERE IS NO SOLUTION THAT DOES NOT INCLUDE COAL

An acclaimed 18,000 delegates attended PowerGen International Conference in December 2008. More than anything this level of interest in our industry supports the plenary session comments of Jacques Besnainou, President of Areva, who declared that the U.S. is at a "crossroads in its energy needs."

Both Besnainou and J. M. Bernhard, Jr., Chairman, President and CEO of The Shaw Group, proceeded to extol the virtues of nuclear power, perhaps a little too obviously selling. For a moment, I thought that I had popped into the wrong plenary since the Nuclear Power Generation Conference was co-located. Good thing those 18,000 folks were there to help me get squared away. Kidding aside, the take-away is that: "Nuclear is not the solution, but there is no solution that does not include nuclear."

What that also says, although not stated specifically, is that "there is no solution that does not include coal," because the only viable baseload generation technologies today and for the foreseeable future are coal and nuclear.

Thomas Farrell II, Chairman, President and CEO of Dominion, was the most rational of the speakers, making a strong and compelling case for educating the U.S. public on the realities of electricity, like for instance, "where it comes from!" That ought to take some of the luster off electric vehicles.

Farrell is right though. There is so much misinformation being foisted on the public these days, that an "Electricity or Energy for Dummies" ought to be on everyone's summer reading list!

The Reality Coalition comes to mind, you know, the folks that advertise that there is no such thing as "clean coal." Of course, there is no such thing as "clean natural gas" either. In fact, I am old enough to remember the days when we had to burn natural gas, and as I have said before, clean burning natural gas produces about half of the CO_2 per MW that those dirty coal dirty coal plants do. That ain't clean either!

A 'mindful' policy

There have been a number of high visibility permitting decisions in recent months, and a host of special interest ads that have demonized dirty coal, so it seems clear at this point, whether articulated or not, that the only way to get a new coal-fired power plant sited is to commit to full Carbon Capture & Sequestration (CCS) on its Commercial Operating Date (COD).

There remains considerable confusion over the capture percent. Those that advocate for CCS as a precondition of a permitting call for full capture at 90%.

I think that those coal-based interests have positioned their offerings wrong. Their 90% offerings are the equivalent of "bundled offerings" and folks are not buying the bundle. If I were selling a coal-fired power plant, I would propose a 60% capture scheme, with an adder to achieve 90%. The adder would be minimal because much of the first cost would be covered at the 60% threshold. At 60%, the coal-fired plant would be every bit equal to the natural gas-fired plant currently being permitted without issue.

I would then, as required by N.Y. State and likely other states following suit, declare the financial exposure for future CO_2 costs as part of any financial disclosure, but at the 60% level, and offer to mitigate that exposure with the minimal additional capture cost to achieve the 90% level.

Although N.Y. State Attorney General Cuomo has only stipulated that this new reporting requirement would apply to coal-fired plants, apparently co-opted by various environmental groups, even he is likely to see that exempting reporting of CO_2 emitted by natural gas-fired units is inherently biased and would compromise the investor full disclosure he is said to be seeking. Of course, we all know that his real target is the coal-fired power plants, so he is in fact inherently biased and co-opted.

I believe that offering 60% CCS, with an adder to achieve 90%, would force the natural gas combined cycle offerings to do the same. Either that or the state officials would be very much at risk for not treating all parties and their investors equally.

Where is it written that Natural Gas Combined Cycle (NGCC) power plants do not have to capture?

A NGCC would have to capture 75% of the CO_2 to be comparable to a 90% capture on a coal plant. Based on the U.S. Department of Energy baseline report, capturing 90% of the CO_2 from a coal plant would yield 1,697 lbm-CO_2/MW, releasing 189 lbm-CO_2/MW to the atmosphere. Capturing 75% of the CO_2 from a NGCC plant would yield 608 lbm-CO_2/MW, releasing the same 189 lbm-CO_2/MW to the atmosphere.

The CCS system in a coal plant captures 3x the CO_2 of an NGCC plant, but at 12% - 13% CO_2 concentration vs. 4% for an NGCC. The coal plant has to handle 1/4 of the gas volume of the NGCC plant.

Coal is approximately $2.00/MMBtu, converted at a 40% HHV. Natural gas is between $6.00/MMBtu and $8.00/MMBtu, depending on the season, and converted at 60% LHV (54% HHV), or 33% more efficient than coal.

The combined effect however is that NGCC Btus are 3x the cost of coal-fired Btus.

It is difficult to get a price for Liquefied Natural Gas (LNG) that is more current than 2002, but it is not likely to be below the U.S. natural gas price. My guess is +20% at a minimum, the combined effect of liquefaction and transportation.

The underlying premise of various environmental groups is that if coal plants are shut down, coal mines will also be closed, solving two problems; a real "two-fer." What really happens is that the coal is still mined, but just shipped overseas, in effect subsidizing lower-cost imports and further undermining U.S. economic competitiveness.

It is still the fuel, stupid! TI

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