

Andover Technology Partners

Consulting to the Air Pollution Control Industry

Clearing the Air...

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Dear James,

Since the last newsletter President Obama has announced his selections for EPA Administrator and Secretary of Energy - both New Englanders. I will discuss the possible implications for different energy sources.

Also, I have some follow up to the conference call I was on in January for the investment bank **UBS**.

Jim

ATP Recent or Upcoming Presentations and Reports



On January 4 I spoke on a UBS Conference call about the environmental requirements facing the three major coal generating fleets in Illinois. This relates to the recent decision by Ameren to divest its merchant assets in Illinois. More on that below.

On March 28 I spoke at the Mcllvaine Hot topic Hour about mercury measurements and controls. More on that below.

At the end of April I will attend the Institute of Clean Air Companies' annual meeting in Naples, FL.

Illinois coal plant environmental requirements, Coal plant sales, and the Mcllvaine Hot Topic Hour

On January 4 I spoke at **UBS's** conference call by invitation of **Julien Demoulin-Smith CFA**, who heads the **UBS Electric Sector** analyst team, to discuss the environmental requirements facing Illinois coal-fired generation. It was timely because **Midwest Generating** had recently filed for bankruptcy protection and **Ameren** had announced plans to divest itself

of its merchant generating plants that primarily include their coal plants in Illinois. Since that call, **Dynegy** has announced its plan to acquire Ameren's merchant assets and **Energy Capital Partners (ECP)** has announced purchase of **Dominion's Kincaid** plant in Illinois (as well as other plants that include **Brayton Point** here in Massachusetts).

During the call I mentioned that of the three major system operators in Illinois - Ameren, Dynegy and Midwest Gen - Dynegy was definitely in the best shape in terms of meeting the state's multipollutant requirements as well as the Federal MATS rule. Dynegy has already made most of the capex investments needed for those rules. Ameren was next. They managed to get a delay in the Illinois SO₂ requirement until 2020, which will give them time to get the **Newton** scrubber in place. With the Newton scrubber, that should put them under the wire on SO₂. Midwest Gen has the most work to do, in my opinion, and I opined that I anticipated that they would request an extension as well, which they did. They will be helped (if you call it help) by retirement of **Crawford and Fisk**. In their 2012 10K released on March 18, Midwest Gen forecasts that the remaining cost to retrofit its plants are \$310 million at **Joliet**, \$196 million at **Powerton**, \$123 million at **Waukegan** and \$194 million at **Will County**, for a total of \$823 million. Midwest Generating forecasts \$585 million over 2013-2015, and I presume the balance of \$238 million after 2015. That's a lot of money, and it does not appear that Midwest Gen has finalized its decisions about which units it will continue to operate. Shutdown or curtailment of operation of some units is an option that is discussed. Midwest Generating doesn't expect to be able to fund these expenditures from their operations and will need to seek capital for these improvements. Midwest Gen is in good shape for NO_x. So, these retrofits are primarily for compliance with mercury, PM and SO₂ requirements. I discussed the fact that Midwest Gen has some particularly small ESPs, which makes their challenge greater than others, as well as two hot-side ESPs that need to be converted in order to meet mercury and PM requirements.

One of the questions that came up on the call was whether it was possible to break up the fleets in a transaction and what that would do to the SO₂ and NO_x limits. Although all of the unscrubbed units in Illinois burn fairly low sulfur PRB fuel, the multipollutant standard for SO₂ requires roughly 50% reduction below the uncontrolled SO₂ rate for that PRB fuel. As a result of this, since the Illinois multipollutant standards establish fleetwide emission rate averages, break up of fleet assets might be problematic since complying with the fleet emissions rate average is reliant upon a scrubbed unit overcomplying to make up for unscrubbed units. In other words, the unscrubbed units probably are unattractive to a buyer from the environmental compliance perspective. But, on the other hand, retirement of any unscrubbed units makes it easier to comply for other facilities.

The Dynegy deal gives Dynegy the Ameren assets while assuming \$825 million in existing debt but also having transferred \$226 million in Ameren Genco cash, \$160 million in working capital and two years of credit support from Ameren. \$60 million in synergies are expected from the deal.

As for **Kincaid**, they are in pretty good shape for compliance with the Illinois rules as well as MATS. They have large ESPs that can be upgraded to fabric filters if needed, and they can achieve the SO₂ and Hg limits with dry sorbent injection and activated carbon injection, respectively. UBS figured that Kincaid accounted for most of the value of the \$650 million acquisition by ECP.

I have had a chance to speak with some companies on follow up calls to the UBS call, and provide some additional insights for these units as well as some utility plants in other states.

What can be said for the prices coal plants have been selling at?

Some of the recent coal facility sales have been for less (in many cases far less) than the cost of recent environmental upgrades, reflecting the poor market conditions that have existed for some coal generators. However, for every seller there is a buyer. I expect that the buyers have some confidence that market conditions, that have made these units unattractive in recent years, will improve for them. Part of that is an expectation in an increase in gas prices relative to coal. More on that near the end of this newsletter. For the sellers, some companies, like Ameren, have made a decision to exit the merchant business altogether and focus on their regulated business. In other cases, such as with **Constellation's** sale of the Baltimore area coal assets to form **Raven Power**, this was partly a forced divestiture to meet regulatory requirements as a result of the **Excelon** merger.

At the **Hot Topic Hour**, I followed Sharon Sjoström, who discussed utility controls for mercury. I spoke about Hg measurements and controls, with special emphasis on sorbent traps and electronic CEMS, on ways to reduce operating cost of mercury control systems, and on some of the special challenges facing Portland Cement plants. I discussed the fact that there is a bias of higher measurements from sorbent traps than electronic CEMS, and this appears to be the result of the fact that the sorbent traps include the Hg from particulate matter. This should be a small effect in many cases, but if the PM has a high concentration of Hg, it could be higher. I also demonstrated the savings potential from using electronic CEMS in an activated carbon control system. Finally, I discussed some of the challenges facing Portland cement facilities in meeting the new Hg rule.

New EPA and DOE Chiefs, GHG NSPS, and Natural Gas

President Obama selected **Gina McCarthy** as the next EPA Administrator and **Professor Ernie Moniz** of MIT as DOE Secretary. Both are New Englanders. Gina McCarthy was the Assistant Administrator for Air and Radiation for President Obama's first term. So, this appointment, if confirmed will provide a degree of continuity at EPA. Professor Moniz, like his predecessor Paul Chu, is an academic. But, Dr. Chu (in addition to having a Nobel Prize) was not as politically active as Moniz has been. Professor Moniz has been fairly active and is a proponent of natural gas and nuclear as a bridge to an energy future that utilizes more renewables. I do expect Secretary Moniz to support use of more natural gas, but with the right environmental controls. It is unclear (at least to me) where he stands on advancing **Carbon Capture Utilization and Storage (CCUS)**.

With respect to CCUS, I know that the proposed **GHG NSPS** is still on a lot of people's minds, especially in the context of the CCUS requirement for coal plants. Like many of you, I was surprised last year to see CCUS considered part of an NSPS limit for coal plants since NSPS is supposed to be a readily achievable limit for any new or modified source of its type, and CCUS is still in development. So, maybe we'll see some movement in the final NSPS along with some more direction on CCUS from DOE. To get CCUS in use, DOE support will be essential.

Gas Prices - What is the future? Part of the argument EPA provided in the proposed GHG NSPS for including CCUS for coal plants was that coal was not competitive with natural gas anyhow, and a CCUS requirement would not impact new coal generation. Even if large gas users are successful in preventing LNG export terminals such as **Sabine Pass** (the March 26 Financial Times had an article on this), LNG will be exported by our neighbors in Canada, and we will see US natural gas prices rise somewhat closer to global market prices, but still well below what was experienced a decade ago. At the other extreme,

prices experienced last year were unsustainable - Henry Hub pricing dipping down to about \$1.86/MMBtu right around this time last year. Analysis I've seen suggests that \$4.00/MMBtu at NYMEX is a price where **Marcellus** gas can be provided throughout the region at a decent return to shareholders, but at \$3.00/MMBtu only a handful of exceptionally productive regions of the Marcellus are viable. I've seen other folks state that well over \$4.00/MMBtu is needed. In any event, at \$4.00/MMBtu gas, under the right circumstances new coal can compete with gas (absent a CCUS requirement and depending upon fuel prices). This is not to say that there would be a coal renaissance at \$4.00/MMBtu gas, far from it, but there are some circumstances where new coal might make sense.

On a related note, thanks to the nice folks at **Encana**, I recently received a good briefing on emissions from unconventional gas production, and the subject of **Reduced Emission Completions (RECs)**, which are what EPA would like to see the natural gas industry do more of. It is pretty much in practice for much of the industry and especially the better operated firms.

Gas producers don't flare their gas, at least once the well is in production, but many oil producers do. Some good news is that **Continental Resources**, the largest unconventional oil producer in **North Dakota's Bakken region**, recently committed to reduce flaring from its wells in the Bakken field to as close to zero as possible. They have already reduced flaring to only 10% of their gas as compared to about 33% for the oil industry as a whole. The Bakken field produces oil as well as gas, but many of the producers are flaring the gas rather than collecting it. For an idea of how much gas is being flared in North Dakota, here's a link to a photo of the Bakken field from space: [Bakken Field From Space](#)

Thank you for taking the time to read this. Should you have any feedback, just shoot me an email.

Sincerely,

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