Energy Biz Magazine
September/October 2005

In the 80s and 90s, they died like flies.

The New Appeal of Illinois Coal
Seemingly each month, another Illinois Basin mine went down – the victim of segmented phase-ins of the Clean Air Act. From the mid-80s until 2000, all throughout Western Kentucky, Indiana and especially in the coal-rich state of Illinois, King Coal was shoved off his throne as the Basin’s high sulfur reserves were eschewed in favor of lower sulfur western coal from Colorado’s western slope and Wyoming’s Powder River Basin.

The harshest blows came with the “acid rain” reduction provisions of the 1990 Clean Air Act Amendments that sharply reduced the allowable limits for the emission of sulfur dioxide from fossil-fueled electric generating plants. Despite its higher energy properties (measured in British thermal units or Btus) and lower transportation costs, many utilities all across the Midwest and South abandoned their long-term Illinois Basin (hereafter IB) coal suppliers and switched fuel sources instead of investing in and installing flue gas desulfurization equipment, commonly referred to as SO2 scrubbers. The resulting free-fall in demand for IB coal shuttered mines throughout the three states, as production plummeted from 141 million annual tons in 1990 to 87.6 million in 2000 as utilities adjusted to western coal. Hardest hit was Illinois, as production fell almost 50 percent from 1990 — when 60.4 million tons were extracted to just 31.6 million in 2003 and 20 mines were shut down, unable to find any utilities for their product.
So blessed with** the largest proven coal reserves east of the Mississippi, and second overall in the nation only to Wyoming and Montana’s combined Powder River Basin, the Illinois Basin retreated. The various state governments and coal lobbyists called for investments in research for new technologies that would once again make their plentiful natural resources valuable. On the federal level, Midwest lawmakers worked on legislation that would help turn back the tide of western coal. And while the hundreds of billions of tons of coal that underlay the region sat in perfect storage, the major coal companies — like Peabody Energy, Consol Energy, Arch Coal and others — repositioned themselves out west or went after dwindling reserves of lower sulfur but higher btu Central Appalachian coal (CAPP) — all the while waiting for market conditions to improve for the interior fields.

Because of new environmental legislation that mandates the implementation of scrubbers, exploding energy demands worldwide, new technologies, high natural gas prices, dwindling reserves in the CAPP coal fields, and capacity and transport constraints across the nation, Illinois Basin coal is fast becoming one of the energy alternative utilities were beginning to seek as the market’s pendulum has swung in a back-to-the-future arc. Longtime Eastern Appalachian coal operators, royalty companies and new investors are buying into the IB, as the majors, led by Peabody, are either re-evaluating or spending capital on new mines and proposing new hi-tech mine-mouth power plant projects of their own. But the greatest impetus is the new regulations that mandate power plants to install scrubbers. This, in turn, allows power generators to switch to a higher sulfur, higher energy coal source, which gives them more energy generating capacity. Since utilities have to scrub anyway, the sulfur problems associated with Eastern and Illinois Basin coal will be mitigated as fuel managers return to a cost-per-btu basis. The big question, according to John Hanou, senior coal analyst at Hill & Associates, is what kind of price these coal companies are going to demand — not to mention what they’re going to need to receive to be profitable. Moreover, just because a plant installs scrubbers, doesn’t mean that all coal is equal. It will still cost somewhat more to scrub higher sulfur coals, although that cost too will be balanced out by transportation costs and energy content. That said, the State of Illinois currently has at least 18 million tons of additional coal permitted for extraction and several new mines are scheduled to come on line this year both in Illinois and throughout the IB.

According to Bob McIlvaine of the McIlvaine Co., at least 250 units with an average of 300 megawatts will have to be scrubbed. “We actually believe that there may be approximately 90,000 megawatts of scrubbed capacity right now,” he says. “By around 2012, it will be closer to 190,000 megawatts.” Much of this is required under the Clean Air Interstate Rules and new regional haze rules. Still other plants will be required to do so by individual state regulations and New Source Review provisions of the Clean Air Act. McIlvaine says this puts the Illinois Basin in an enviable light because with sulfur out of the equation it’s about Btu’s. Also “with the Illinois Basin coal’s higher chlorine content, this will make mercury capture in the scrubbers much more feasible,” he says. “In fact, the federal Mercury Rule is written in such a way as to assume that you will not be able to remove mercury from the low chlorine coal, such as Powder River Basin coal. They were exempted from that legislation. Illinois coal, by also installing a chlorine pre-scrub or having similar technology in place, becomes both cleaner and higher burning.”

Today in Illinois, with its plentiful reserves, only a handful of the in-state power plants are scrubbed, and 80 percent of the roughly 33 million tons mined last year were exported — most to generating plants owned by the Tennessee Valley Authority and Cinergy. Currently, almost a dozen power plants have been proposed within Illinois alone, each using Illinois coal. While these plants range in technology from integrated gasification combined-cycle (IGCC plants transform coal into a gas that can be burned in a modified combustion turbine to generate power) to carbon sequestration (which pumps CO2 and other emissions into the mined out workings underground), designers and financial backers are counting upon less expensive fuel and transport costs to offset the higher initial expenses associated with these new, and as some feel, unproven technologies. Perhaps for this reason, most of the proposed new generating plants are owned by smaller independent companies, such as Indeck Energy and Enviropower. However, Peabody Energy, the nation’s largest coal producer and Illinois Basin production leader, has proposed two massive mine mouth projects, one each in southern Illinois and western Kentucky. Both are in the permitting stages, but when built their 21st
century technologies will make them among the cleanest coal-fueled plants in America. Indeck, an Illinois company that specializes in building industrial power plants throughout the Midwest, decided four years ago to seek permission to build a 660-megawatt power plant in Buffalo Grove, near Joliet. Its management felt that the time was right to take advantage of depressed coal prices and a more attractive regulatory climate and return. "It's ridiculous to have so much coal right here and not burn it," said Indeck spokesperson Jim Thompson. "With new legislation, you're going to have to scrub about 90 percent of your coal anyway. The advantage of Powder River Basin coal just goes away. We have higher btu coal just 150 miles away. We can burn that instead."

Vince Stroud, vice president of Commercial Fuels at Cinergy went further. "By making investments in scrubbers, utilities have leveled the playing field on what you can and can't burn," he says. The notion of compliance coal has changed entirely. Prior to this wave of regulations, it was more economical for many utilities to simply fuel switch, either from Illinois Basin coal to western coal or lower sulfur high btu central Appalachian coal, often depending on the geographical position of the power plant. Other utilities decided to use natural gas for base load generation instead of coal. Many are now dealing with much higher costs, the brunt of which is being passed onto customers. "However, Cinergy has always been a large taker of Illinois Basin coal, ourselves and the TVA," Stroud says. "Southern Power did burn a lot of Illinois Basin coal, but they had to switch to CAPP coal because of the Clean Air Acts. But now that they have to scrub anyway, it puts them and the rest of us right back where we were 20 years ago."

**Diversity**

Part of the attractiveness of the Illinois Basin is its fairly open playing field for coal operators. While the majors like Peabody and Alliance certainly dominate the region, many independent coal operators such as Knight Hawk, Charolais, Solar Sources and Allied Resources play a vital part in the region, and each have used innovative methods to profitably mine the region’s higher sulfur coal reserves. “We see a more diverse market there, and we love the basin because that’s our backyard,” Stroud says. "With our Public Service of Indiana, we’re the largest utility in the state of Indiana. While we burn roughly 17 million tons of Illinois Basin coal, the whole market is only 80.” Also given that the Btu levels within Northern Appalachia and the IB are comparable, coal from the latter field will function as an alternative to Northern Appalachia coal and increased production will keep a lid on prices in both regions. ☛