



Energy | BTU Content in Coal

Summary

In the United States, more than 1500 generating plants at approximately 500 facilities use coal to generate electricity. Worldwide, this number doubles to more than 3000 generating facilities. Increasingly stringent environmental regulations combined with high energy prices, and increasing capital expenditures make this an attractive time to improve plant instrumentation. In addition, the U.S. government has earmarked millions of dollars for technologies leading to cleaner burning coal, and it is almost a certainty there will be a carbon emissions tax in the near future.

Progression's on-line Titan CCA™ provides accurate energy content (BTU) and moisture measurements to coal-fired generating stations. These measurements can be used in conjunction with plant control systems, future carbon capture and sequestration technology, and oxygen enriched facilities to provide significant efficiency improvements, which lead to lower unit cost per kW generated as well as a decrease in CO₂ emissions.

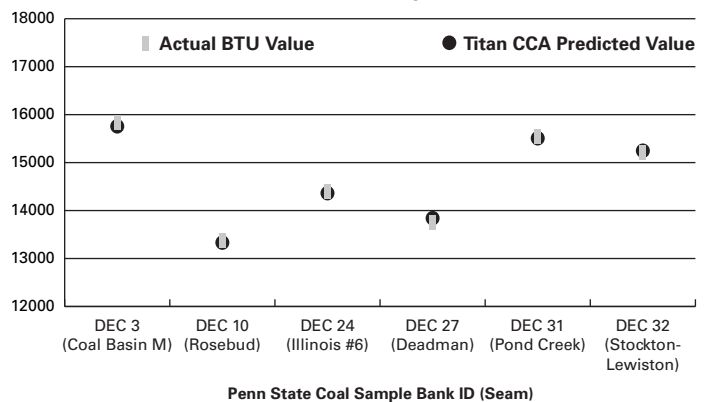
Knowing the coal BTU in real time allows for better control of target stoichiometric combustion ratios than using an excess O₂ analyzer or advanced ATC alone. The lag time in the O₂ analyzer that delays adjustment and the tendency for operators and ATC is to operate using excess air to avoid a low O₂ condition. Of course, a more significant reduction in excess air or higher coal pricing will improve the payback.

A 1% improvement in efficiency per 1000 mw would deliver an annual savings in coal costs at US\$1,750,000 (coal at US\$40/ton). It would also reduce CO₂ emissions by 44,000 tons/year. Assuming a future tax of US\$10/ton, the Titan CCA would save approximately \$440,000 in future carbon taxes. Project costs could be recovered in four months.

Benefits

- Efficiency improvements for the boiler
- Proper accounting of energy content utilized
- Lower CO₂ emissions
- Results in 5 minutes or less
- Non-destructive analysis
- Fully automatic 24/7 operation
- Operator independent
- Chemical-free analysis
- No nuclear source

BTU Analysis



Calibration Results

