



the ENERGY lab

Where energy challenges converge and energy solutions emerge

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Energy Analyses

Fossil Energy Cost and Performance Baseline Studies

Overview

The studies listed on this page establish up-to-date estimates for the cost and performance of combustion and gasification based power plants as well as options for co-generating synthetic natural gas and fuels, all with and without carbon dioxide capture and storage. Several ranks of coal are being assessed in process configurations that are based on technology that could be constructed today such that the plant could be operational in the 2010 - 2015 timeframe.

The three volume set consists of the following:

- ▶ Volume 1: Bituminous Coal and Natural Gas to Electricity
- ▶ Volume 2: Coal to Synthetic Natural Gas (Various Coal Ranks)
- ▶ Volume 3: Low-rank Coal to Electricity

These results are considered to be the most comprehensive set of publicly available data to date. As such, additional analyses will be added and existing reports updated as necessary to keep this information as current as possible. Visit this page frequently to see the latest in baseline performance and cost estimates.

Cost and Performance Baseline for Fossil Energy Plants

▶ Volume 1 - Bituminous Coal and Natural Gas to Electricity (May 2007)

The [Cost and Performance Baseline for Fossil Energy Power Plants study, Volume 1: Bituminous Coal and Natural Gas to Electricity \(May 2007\)](#) [PDF-6.5MB], establishes performance and cost data for fossil energy power systems, specifically integrated gasification combined cycle (IGCC), pulverized coal (PC), and natural gas combined cycle (NGCC) plants all with and without carbon capture and sequestration. The analyses were performed on a consistent technical and economic basis that accurately reflects current market conditions for plants starting operation in 2010. The study serves as a benchmark to track the progress of DOE Advanced Power Systems R&D and as a baseline for analyzing fossil energy plant options. These results are considered to be the most comprehensive set of cost and performance data available in the public literature to date. The cost and performance data were compiled from published reports, information obtained from vendor quotes and users of the technology, and data from designing and building utility projects. It was peer-reviewed by industry experts, academia, and government research and regulatory agencies. In addition to the complete final report, a presentation that summarizes the results and a desk reference that contains summary sheets for each case and technology are also available.

- [Final Report](#) [PDF-6.5MB]
- [Presentation](#) [PowerPoint-1.7MB]
- [Desk Reference](#)

▶ Volume 2 - Coal to Synthetic Natural Gas (Various Coal Ranks)

- Expected publication date: Final report; 2008. Draft results may be posted as they become available.

▶ Volume 3 - Low-Rank Coal to Electricity

- Expected publication date: Final report; 2009. Interim reports and draft results may be posted periodically.

