



# Designing Advanced Coal Power Processes Using aspenONE™ Process Engineering

*Model, control, and visualize  
asset-wide operations in  
real-time to maximize  
productivity and efficiency*

## |||||| Overview

*aspenONE Process Engineering* provides leading-edge technologies that enable plant engineers to model the entire gasification process in one integrated environment. Benefits include improved yields, increased plant efficiency and quality, and reduced capital and operating costs.

## |||||| The Challenge: Simplify Coal Gasification to Drive Profitability

Power plant owners/operators, E&C companies, and chemical manufacturers face a wide range of challenges when considering design options for gasification plants:

- Concerns over global warming and energy independence, which are leading to major shifts in energy policy and technology
- A growing need to capture and sequester carbon dioxide from conventional power plants and to design and build new power plants using Integrated Gasification Combined Cycle (IGCC) technology, ultra-critical oxygen-fueled combustion, and other advanced technologies
- The need to increase combustion efficiency to offset carbon capture cost
- Identifying the right gasification technology, gas cleaning system, process designs, and carbon capture process using accurate technical and economic evaluation
- Obtaining reliable estimates for capital and operating costs of design alternatives

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## |||||| The AspenTech Solution: Integrated, End-to-End Plant Simulation

Aspen Plus® was specifically designed to simulate coal conversion processes during the 1970's oil crisis and it remains the preferred solution for modeling advanced power processes today.

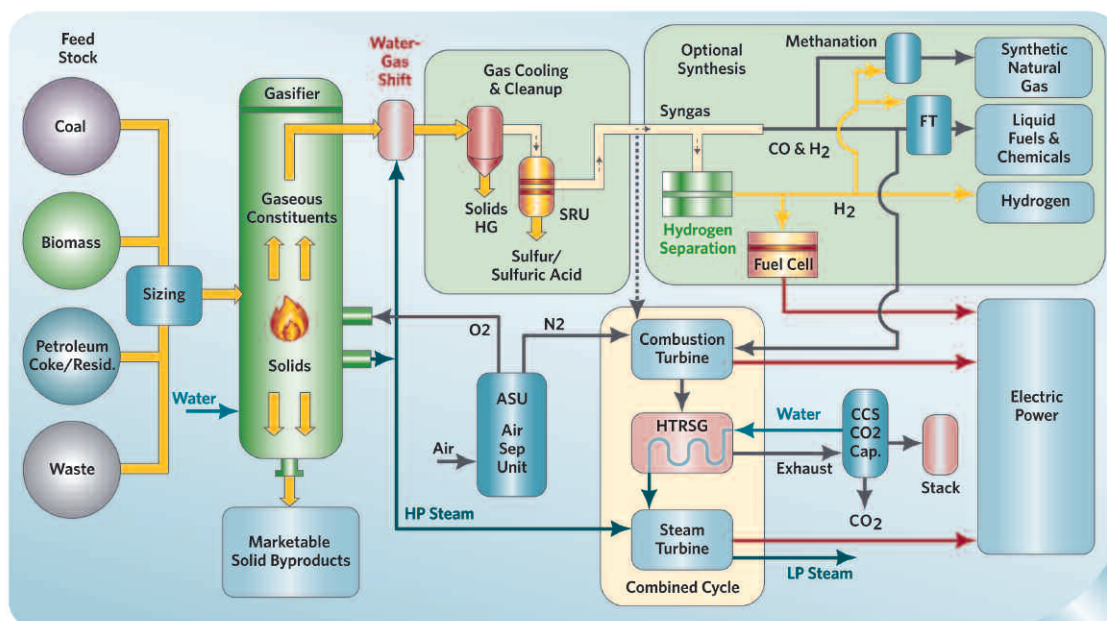
Customers have used Aspen Plus models to design all types of gasifiers:

- British Gas/Lurgi Fixed Bed Gasifiers
- KRW Fluidized Bed Gasifiers
- General Electric Entrained Flow (Downflow) Gasifier
- E-Gas Entrained Flow (Upflow) Gasifiers
- Kellogg Transport Reactor Gasifiers

Aspen Plus is the most widely used simulator for designing:

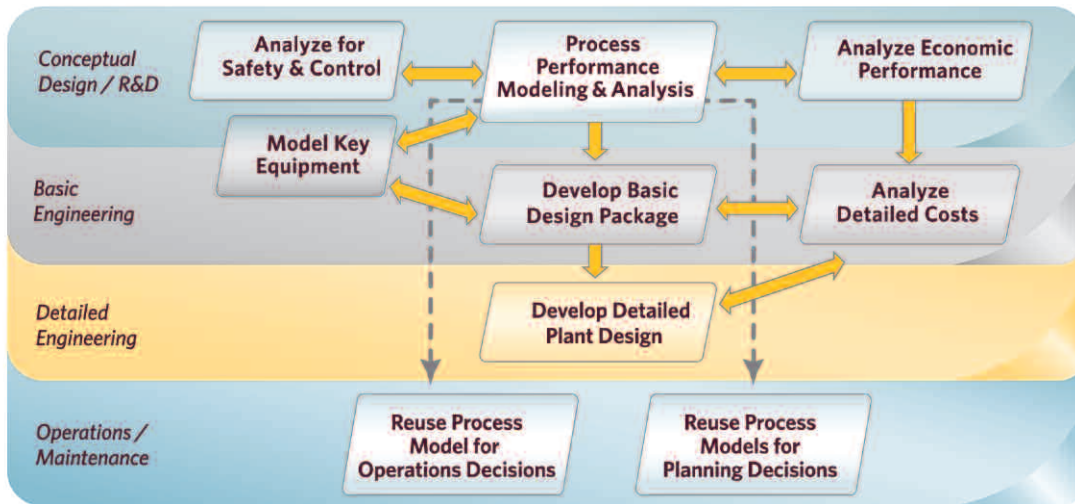
- Air Separation Units (ASU) and Sulfur Recovery Units (SRU)
- Coal milling and preparation processes
- Acid gas scrubbing applications

aspenONE Process Engineering allows engineers to design advanced energy processes, estimate capital and operating costs for process alternatives, design process heat exchangers and columns, and re-use the design models to support operations after the coal plant is built.



IGCC in the Heart of a "Coal Refinery"





**aspen ONE Process Engineering** addresses each phase of the process lifecycle, enabling companies to develop the most economical and reliable IGCC plants.



#### ||||||| aspenONE Process Engineering

*aspenONE Process Engineering* is an integrated lifecycle solution from—conceptual design to plant start-up and operations support—enabling you to model, build, and operate safer, competitive, and more reliable process plants. Companies are able to reduce capital and operating costs, increase engineering efficiency and quality, and accelerate time-to-market with payback in months instead of years.

#### ||||||| About AspenTech

AspenTech is a leading provider of award-winning process optimization software and services. AspenTech's integrated aspenONE™ solutions enable manufacturers to reduce costs, increase capacity, and optimize operational performance end-to-end throughout the engineering, plant operations, and supply chain management processes, resulting in millions of dollars in cost savings.

For more information, visit [www.aspentech.com](http://www.aspentech.com).

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