



- 1 Coal, water and oxygen are fed into a high-pressure gasifier, where the coal is partially combusted and converted into synthetic gas ("syngas").
- 2 The ash in the coal is converted to inert, glassy slag.
- 3 The syngas produced in the gasifier is cooled and cleaned of particles.
- 4 The slag and other inert material may be used to produce other products or may be safely managed in a landfill.
- 5 Next, the syngas passes through a bed of activated charcoal, which captures the mercury.
- 6 The sulfur is removed from the syngas and converted to either elemental sulfur or sulfuric acid for sale to chemical companies or fertilizer companies.

- 7 The syngas can either be burned in a combustion turbine or used as a feedback for other marketable chemical products.
- 8 The syngas is fired in a combustion turbine that produces electricity.
- 9 The hot exhaust from the gas turbine passes to a Heat Recovery Steam Generator (HRSG).
- 10 Steam produced in the HRSG, along with additional steam that has been generated throughout the process, drives a steam turbine, which also produces electricity.
- 11 The steam from the turbine cools and then condenses back into water, which is then pumped back into the steam generation cycle.

