

## Combined-Cycle Generation

Combined-cycle plants generate electricity more efficiently and consume less fuel per kilowatt-hour of output than conventional generators. A typical combined-cycle plant uses one or more gas turbines, a heat recovery steam generator (HRSG) and a steam turbine. The gas turbines generate most of the plant's power by internal combustion of fuel, exhausting hot gases through turbine blades that rotate an electric generator.

When the exhaust gases exit the gas turbine they still are very hot. This waste heat is recovered and is used to generate steam in the HRSG. In turn, steam is expanded through the steam turbine to generate additional electric power output.

Combined-cycle generation achieves thermal efficiency of approximately 59 percent, and emissions are lower because less fuel is burned.

