# 1－3　Coal Gas Production Technology Acceptable for Fuel Cells (EAGLE)

Keywords: Coal, Gasification, Fuel Cell, IGFC

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The EAGLE (coal Energy Application for Gas, Liquid and Electricity) project has been started to develop the technologies for IGFC (Integrated coal Gasification Fuel Cell combined cycle).

The efficiency is improved by the Integrated coal Gasification Combined Cycle (IGCC) system which consists of a gasifier, gas turbine and steam turbine etc. And it is proved that the Integrated coal Gasification Fuel Cell Combined cycle (IGFC) system which consists of a gasifier, fuel cells, gas turbine and steam turbine etc achieves higher efficiency than IGCC according to our feasibility study.

The purpose of this project is to establish the technologies required for IGFC, which are technologies for optimum coal gasification and syngas clean-up for fuel cells. The EAGLE Pilot Plant is composed of a 150t/day coal gasification unit, syngas clean-up unit, air separation unit and gas turbine unit, as shown in Figure 1

In 1995, an IGFC (Integrated coal Gasification Fuel Cell combined cycle) feasibility study and element tests were conducted. Following a basic design and a detailed design, the construction work, including the manufacturing of a gasifier and other main facilities of the EAGLE pilot plant was started at the Wakamatsu Research Institute in 1998. The pilot tests have been continuing since July 2001.In October 2002, we conducted a continuous gasifier operation of about 290 hours.

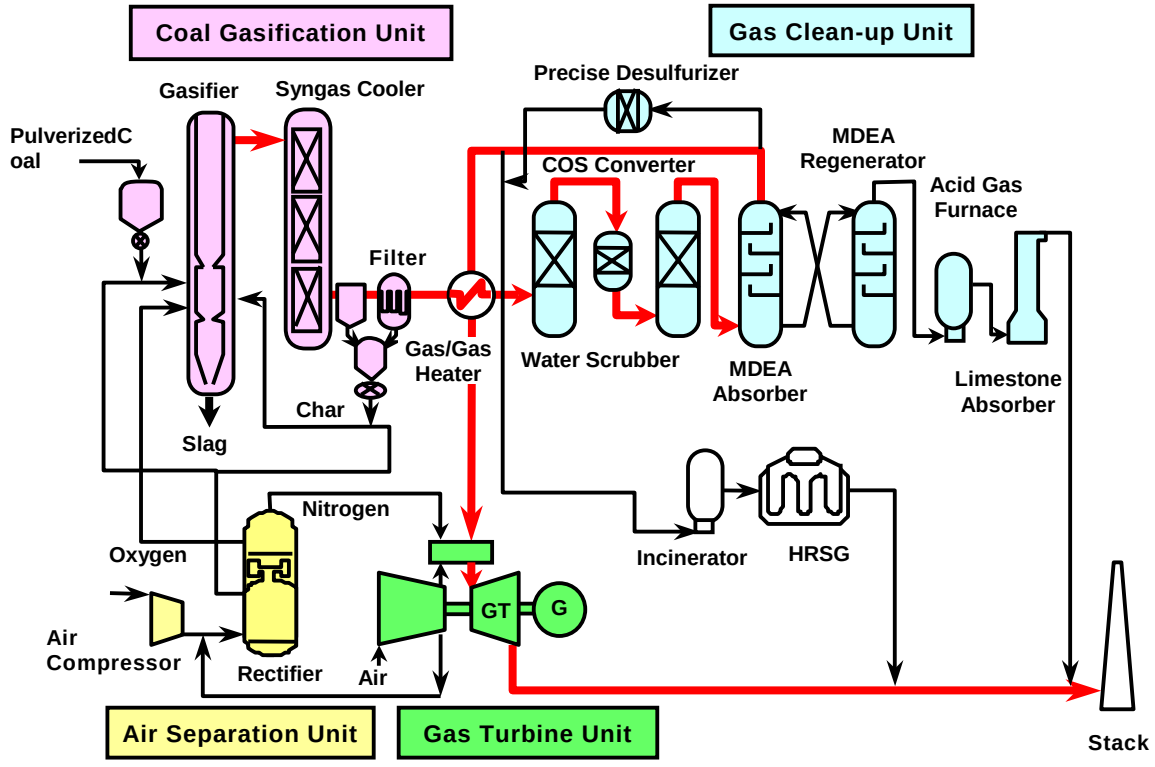


**Figure 1　Flow Diagram of the EAGLE Pilot Plant**