Carbonizing Gasification Gas Engine Power Generation Test Facility for Biomass/Waste

**Purpose:**
Because power generation efficiency is low and business profits are poor except in cases of large-scale plants of several thousand kW or more, the introduction of biomass power generation plants is not so advanced. Therefore, it is intended to develop a highly effective gasification gas engine power generation system that can also be used in small and medium-sized facilities.

**Outlines:**
This demonstration facility consists of a “Carbonizing gasifier” that has been developed by CRIEPI & Okadora Co., Ltd. and a highly effective “Gas engine” that has been developed by Kansai Electric Power Co., Inc. (KEPCO) & Niigata Power Systems Co., Ltd. This power generating system, which represents a step towards practical application, integrates the advanced gasification technology of CRIEPI and the highly effective gas engine technology of KEPCO. CRIEPI & KEPCO demonstrate the fact that this efficiency is highly effective, and are advancing technological development for practical use.

**Specifications:**
(1) Gas Supplying Unit from Gasifier
   a) Gas Flow Rate : Rated 780Nm³/h
   b) Pressure/Temp. : 35 〜 60kPa/40 ℃ or lower
   c) Capacity of Gas Holder : 300m³
(2) Gas Engine (Kansai EPC & Niigata Power Systems)
   a) Type : 6L17AG (6-cylinder engine)
   b) Power Output : Rated 320kW
   c) Power Efficiency : 34% (LHV base)
   d) Engine Cycle : Miller Cycle

**Location and Date of Installation:**
Yokosuka Campus, January 2007