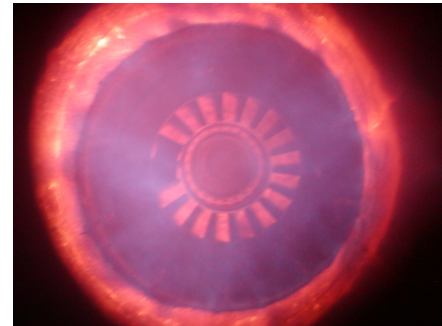


## “Opportunity Fuels” Help with Rising Fuel Costs

With conventional fuel (oil, natural gas) costs rising, users are turning to alternative fuels for all of their combustion needs. Among these “opportunity fuels” are waste and by-product gases that were previously disposed of by flaring, incinerating, or other, non-productive means. Hamworthy Peabody Combustion has been very successful providing burners and burner modifications to burn these fuels, including blast furnace gas, coke oven gas, and other waste gases. Unlike these gases which are usually limited to certain industries (e.g. steel, petroleum, and chemical), one such gas is often available to a wide range of end-users: landfill gas (LFG).



As the name implies, landfill gas is a byproduct of the natural decay of organic matter in landfills and trash piles. One large American automaker contracted with Hamworthy Peabody Combustion to not only supply, but to install and commission burners, fuel trains, burner management and combustion control systems as a complete turnkey project, offering single source responsibility. Four boilers in total were converted at three different plants, modifying an existing burner on one package boiler while installing new vertical up-fired burners on three formerly stoker-fired boilers.



In order to maximize LFG usage (and hence maximize savings) and still maintain boiler availability, the combustion control system was designed such that all the available LFG was utilized with natural gas or oil being used as the supplemental fuel for additional heat input, if required. To accomplish this safely, fully-metered, cross-limiting combustion controls are utilized. Multiple fuels fired simultaneously and combustion air flows are measured and controlled assuring proper fuel/air ratios at all loads and regardless of load increasing or decreasing

The first of these boilers has been operating successfully since 2002 with LFG supplying an average of approximately 60 MM BTU/hr with corresponding significant savings over natural gas and fuel oil.

### Factors to Consider

- Experience of the Equipment Supplier and the Installers.
- Availability of Landfill Gas as related to steam output requirements.
- Pressure of available LFG
- Local emissions requirements.
- Impurities in the LFG. For example, even small amounts of H<sub>2</sub>S can require stainless steel burner components and suitable valve train components materials.
- Boiler loads.

For further information, contact your local representative, Region Manager, or Hamworthy Peabody Combustion directly; visit our website for further contact information: [www.hamworthy-peabody.com](http://www.hamworthy-peabody.com)

An ISO 9001:2000 Approved Company