

Energy Utilisation Case Studies

Monitoring calorific value



A Japanese gas supply company proposed to change the calorific value (CV) of the gas it supplied to customers for commercial and operation reasons. Some of the gas engines installed on the distribution network had been configured to operate with the original fixed CV and therefore they had to be readjusted for the new CV.

The gas company temporarily installed GasPT's on the network to monitor the change in CV across the network. On the day of changeover from the old to the new gas the GasPT identified when the new gas was approaching a particular area and field service engineers were directed to adjust the effected equipment.

The monitoring system utilized the mailing function of a mobile phone to acquire data from the GasPT's and display it on a screen thus enabling the activity of the service engineers to be coordinated from a central control room. This activity was further supported by on-site CV measurement using portable GasPT units.

UK Gas Quality Exercise: Pilot study of the impact of gas imports on appliance performance





GL undertook a pilot study to investigate the impact of natural gas quality variation on appliance operation. The study initially involved determining the most populous appliances across the UK appliance populations for types of boiler, fire, cooker and water heater. In addition the data was compared against the combustion performance of a new highly efficient condensing boiler.

Data was gathered on emissions of carbon monoxide, NOx and soot, and together with temperature measurements of the flue gases and appliance surfaces provided an indication of the variation in appliance efficiency with change in gas quality. The study highlighted several issues relating to the operation of the appliances. The output of the study also provided potential remedial action necessary to maintain good appliance overall operation if the gas quality of the supplied gas alters.

Successful completion of the above 2 projects led to GL being awarded the major share of the much larger follow-on programme to test the impacts on a representative sample of the entire UK appliance project. Together this work is informing UK Government Strategy for dealing with the changing gas quality engendered by the imminent UK move towards being a net importer of natural gas.