

New Applications Guide, “Specifying Gas Flow Meters In Green Energy and Pollution Reduction”



San Marcos, CA—October 28, 2008—

The new **Green Energy Applications Guide** from Fluid Components International (FCI) profiles nine green energy and pollution reduction applications, providing solutions to the complex challenges of obtaining accurate, reliable gas flow measurement within them. Included are wastewater treatment digesters, on-farm digesters, landfill gas measurement/recovery, biomass fermentation systems, ethanol production/ refining, coal mine methane

recovery, biomass gasification, flare gas systems and flue gas monitoring.

Drawing on 40-plus years of FCI expertise in gas flow measurement, this free 12-page educational guide highlights critical factors that process and plant engineers must consider to achieve optimum flow meter performance, to minimize maintenance and to ensure long service life. Each application is detailed on its own page with a helpful illustration of the process.

FCI's thermal dispersion gas flow meters have been utilized in energy production, pollution monitoring and environmental management for decades. Their rugged, no moving parts design, low cost installation and direct mass flow measuring technology are well suited to provide flow rate and totalized flow data for process control, regulatory compliance and carbon trading as well as greenhouse gas reduction incentives and credits.

FCI offers a broad range of thermal mass flow meter solutions that can be applied in the most harsh, wet, dirty and hot industrial environments. Available for use in line sizes from 0.25 inch [6 mm] to largest of stacks, they measure flow rate over a wide flow range, feature up to a 1000:1 turndown, and can be applied in any gas or mixed composition gases. FCI flow meters offer excellent accuracy over a long life with virtually no maintenance, which eliminates expensive field technician time and the costly re-engineering of critical plant processes.

Ethanol Production and Refining

Thermal mass flow meters in ethanol plants accurately measure fuel gas, air flows and waste gases in small to large lines operating with variable temperatures and flow rates to optimize ethanol process productivity. Ethanol production is a distillation process relying on boilers whose efficiency is optimized by controlling their air-to-fuel ratio using flow meters. In addition to producing Ethanol, this process generates waste gases with volatile organic compounds (VOC's) that are monitored with flow meters.

Coal Mine Methane

Thermal mass flow meters in coal mine methane recovery systems measure the extracted gas, support efficient operation of co-gen engines or methane oxidizer systems and provide data for incentive credits. The recovery and utilization of methane (CH₄) gas from coal mining is creating a new energy resource and reducing a major source of green-house gases. The three major sources of coal mine methane (CMM) are degasification systems (drainage type), both pre-mine and gob, ventilation air (VAM) and abandoned or closed mines.

On-Farm Digesters and Biogas Systems

Thermal mass flow meters ensure the efficiency of on-farm biogas production processes. Decomposing fecal waste on dairy farms, swine ranches, cattle feed lots and other livestock operations can be harvested in on-farm digesters to produce biogas for use as fuel gas. Rather than emit dangerous Methane and other greenhouse gases into the environment, farmers are capturing the gas to power plant operations and/or for export to the public power grid.

Landfill Gas Measurement

Thermal mass flow meters accurately measure landfill gas flows for environmental reporting to regulatory agencies and for electric energy co-generation. The landfill gas is converted to electricity that is exported and sold to the public power grid. Landfill gases are a mixture of CH₄ and carbon dioxide (CO₂) with trace gases that include N₂, O₂ and others.

BioMass Fermentation & Recovery

Thermal mass flow meters measure biogas from biomass fermentation and recovery operations. This gas is a byproduct of organic waste from fruit and vegetable peelings or meat preparation in the food/beverage industry. It is a mix of CH₄, CO₂, water and trace amounts of H₂S. The crop, food, or ag waste is digested under anaerobic conditions in a reactor tank or fermentation tower with the biogas used as fuel for heating or to power an electricity generating engine.

Anaerobic Digesters

Thermal mass flow meters measure digester gas produced in the anaerobic digesters utilized in municipal wastewater treatment plants. The digester gas is a dangerous combination of CH₄ and CO₂, with smaller percentages of H₂S and other gases. The gas flow varies widely too—based on fluctuating plant demands and seasonal variations in temperature and humidity.

Fluid Components International is a global company committed to meeting the needs of its customers through innovative solutions to the most challenging requirements for sensing, measuring and controlling flow and level of air, gases and liquids.