

# Using Portable Emissions Analyzers for Optimizing the Performance of a Cogeneration Plant



## Application Note # IA-13-0801

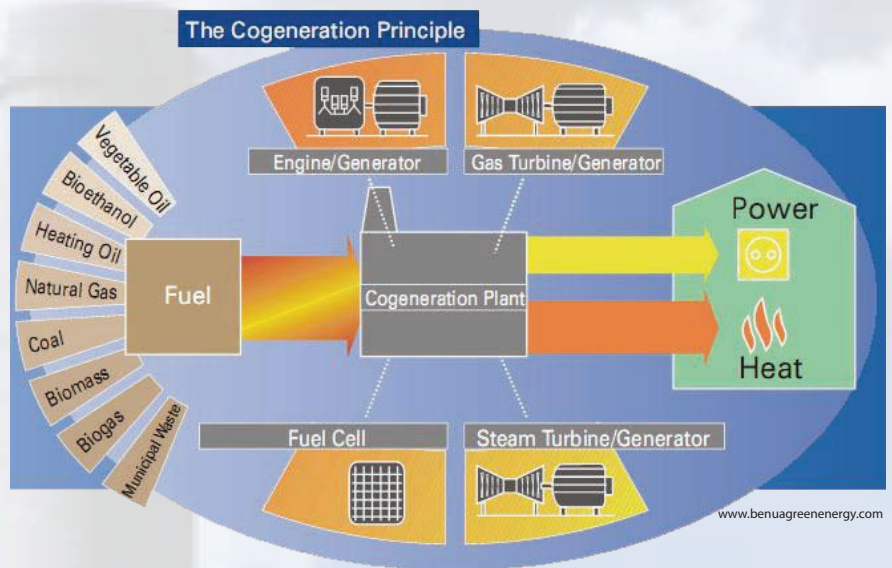
Cogeneration, or combined heat & power (CHP), is the utilization of boilers, turbines, and/or engines to simultaneously generate electricity power and heat that can be useful in several ways such as for hot water, steam, district heating, and water desalination.

Some types of cogeneration process applications include the following:

- **Industrial Processes** – Power Plants, Refineries, Chemical Plants, Food & Beverage, Pharmaceutical
- **Waste Incineration & Management** – Industrial, Municipal, Medical & Hospital, Landfills
- **Burning Biomass** – Pulp & Paper Plants, Saw Mills, Sugar Mills, Peat & Wood Waste
- **Institutional** – Schools, College Campuses, Prisons, Hospitals

Optimizing the overall performance of a cogeneration plant for fuel savings, combustion efficiency, maintenance, safety, and emissions reduction purposes can be done by using a portable emissions analyzer to monitor important parameters at many different locations in the CHP plant including the following:

- **Flue Gas Temperature**
- **O<sub>2</sub>, CO, & CO<sub>2</sub>**
- **C<sub>x</sub>H<sub>y</sub> Hydrocarbons**
- **Total NO<sub>x</sub> (NO + NO<sub>2</sub>)**
- **SO<sub>2</sub> for SO<sub>x</sub>**
- **H<sub>2</sub>S**



## Instrument Solution: E8500 Portable Emissions Analyzer

The E8500 portable emissions analyzer can easily be used for accurate measurements of flue gas temperature, O<sub>2</sub>, CO, CO<sub>2</sub>, both NO & NO<sub>2</sub> for True NO<sub>x</sub>, SO<sub>2</sub>, H<sub>2</sub>S, and C<sub>x</sub>H<sub>y</sub> hydrocarbons throughout a cogeneration plant. The E8500 includes a real-time software package with Bluetooth wireless communications to monitor, graph, and record all measurements and calculations.

