

### The Customer

The Company is one of the world's leading developers and producers of advanced fuels and green chemicals.

### The Process

The Company uses a gasification process that breaks down wood chips, waste and other feedstock using plasma technology. The process produces a uniform synthetic gas (syngas) that is used to power their turbine engines. They measure the total calorific value of the syngas in order to optimize engine performance.



### The Problem

They were using a gas chromatograph to take the gas measurements. The problem with this technology was that the GC only gave them readings for low chain hydrocarbons and measurement in batch-mode. It did not capture Benzene or other high carbon chain molecules. So they had to make time-consuming calculations to include all of these unknowns. This led to operating the engines for worst case and not optimum efficiency. They felt that if they could make real time measurements of what was actually in the sample they would be able to increase the capacity and efficiency of the gas engine. They would know exactly what was happening and would not have to operate under worst case conditions.

### The Solution

The CalorVal BTU analyzer was the analyzer of choice because it completely burns the syngas sample and therefore is a direct measure of the total calorific value. It accurately reads the varying compositions and concentrations of all the gases in the syngas stream. Since this analyzer reads continuously, it measures in real-time mode to provide dynamic control of the engine. This accurate measurement allowed the Company to determine the proper oxygen levels needed for complete combustion to their engines.

### Analyzer Placement

The analyzer was installed on the outlet of their gasification system prior to the engine. This point is where they could get the most representative readings. The measurements even exceeded their accuracy expectations by a factor of 10!

### SIC Code

- 28690104: Ethyl alcohol, ethanol

### NAICS

- 325193: Ethyl alcohol mfg

