GE ENERGY’S JENBACHER ENGINES DRIVE STEEL WASTE GAS PLANTS IN NORTHERN SPAIN TO PERFORMANCE MILESTONES

Special engine design opens up utilization in the steel industry

JENBACH, AUSTRIA—February 29, 2008—Two pioneering factories in the steel production supply chain in northern Spain recently reached new operational milestones in their use of GE Energy’s Jenbacher specialty gas engines. By utilizing various waste gases from the factories’ production processes, the engines are opening up an alternative source of on-site power, helping to reduce the plants’ emissions and use of fossil fuels.

In the northern Spanish town of Bilbao, a coke oven gas plant installed at a factory operated by one of Spain’s leading producers of coke, Productos de Fundición S.A. (Profusa), recently achieved a significant milestone of one million operating hours. Profusa’s break-through waste-gas-to-energy plant, which features a dozen of GE’s Jenbacher JGS 316 GS-S/N.L Jenbacher generator sets, produces an estimated average of about six megawatts (MW) of electricity in total, depending on the fuel composition. The engines’ special engine control system allows for maximum flexibility in the gas composition since the plant’s start-up in 1995.

A second plant, at the Arcelor Mittal steel factory in Avilés, northern Spain, recently successfully reached the 20,000 operating hours mark for all gas units involved.
– demonstrating GE’s technological expertise. Installed in 2004, a dozen of GE’s Jenbacher JMS 620 GS-S/N.LC engines are powering a unique cogeneration system that utilizes a different type of steel production processes’ waste gas called LD-converter gas.

The power plant is owned and operated by Sidergás Energia S.A., part of the HC ENERGÍA’s cogeneration and special generation division and the EDP group’s company operating in the Spanish region. GE’s gas engines were chosen due to their ability to burn the toxic and residual LD-converter gas both safely and efficiently. By using the low-calorific value gas that generates 1.7 MW of electrical power output per engine, other fossil energy resources can be preserved.

In the past, operators used steel waste gases to produce steam in boilers and generate electricity by means of a traditional Rankine cycle. However, GE’s pioneering Jenbacher application allows steel factories to simultaneously generate electricity and heat in an extraordinarily efficient way thanks to the capability provided by advanced GE’s Jenbacher gas engine technology. Using the heat allows obtaining added value from the unavoidable emissions derived from the combustion of the specialty gases that are characterized by varying compositions as well as calorific values and combustion behavior.

“With steel producers around the world actively seeking solutions to reduce their production costs, increase their energy efficiency and lower their emissions levels, we are proud that GE’s Jenbacher specialty gas engines are serving as alternative energy sources for the entire steel industry,” said Prady Iyyanki, CEO of GE’s Jenbacher gas engine business.
The steel production processes typically create large volumes of specialty waste gases. Coke oven gas, generated during the processing of bituminous coal into coke in coke oven batteries, mainly consists of hydrogen and methane. Meanwhile, LD-converter gas – with its main component carbon monoxide – is created during the Linz Donawitz (LD) steel manufacturing process that converts pig iron to steel.

About Jenbacher gas engines by GE Energy

GE Energy's Jenbacher gas engine business, based in Jenbach, Austria, is a leading manufacturer of gas-fueled reciprocating engines, packaged generator sets and cogeneration systems for power generation.

Jenbacher engines cover an output range of 0.25 to three MW and operate on natural gas or a variety of specialty fuels, including landfill and coal mine gas or alternative fuels like biogas, sewage gas and industrial waste gas. Patented combustion systems coupled with advanced engine and plant management systems enable customers to meet stringent international emission standards while offering high levels of efficiency, durability, and reliability.

About GE Energy

GE Energy (www.ge.com/energy) is one of the world's leading suppliers of power generation and energy delivery technologies, with 2007 revenue of $22 billion. Based in Atlanta, Ga., GE Energy works in all areas of the energy industry including coal, oil, natural gas and nuclear energy; renewable resources such as water, wind, solar and biogas; and other alternative fuels.

Numerous GE Energy products are certified under ecomagination, GE's corporate-wide initiative to aggressively bring to market new technologies that will help
customers meet pressing environmental challenges. GE’s Jenbacher biogas, landfill gas and coal mine methane engines have received ecomagination certification, underscoring the environmental and economic benefits offered from the utilization of generating energy from high methane content waste streams.

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**Attention Editors:**

“External” and “internal” plant photographs are immediately available upon request.