



GE Energy

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Press Release

GE Energy Announces Industrial Waste-Heat Recovery Innovation for Onsite Power Plants

GE's New Gas Engine-ORC Technology to Boost Efficiency of Onsite Power Projects Worldwide

MUNICH, GERMANY—July 3, 2009—GE Energy and energy developer ECOS Ltd. announced today they plan to demonstrate an innovative, industrial waste-heat recovery system that will dramatically increase the efficiency and output of a 7.2 megawatt (MW) biogas power plant in the eastern Slovenia town of Lendava, near the border with Hungary.

GE's new pilot Organic Rankine Cycle (ORC) waste-heat recovery system for gas engines is designed to make onsite power plants that use natural gas, landfill gas and other waste gases more cost-attractive to build as countries install more cogeneration and renewable energy capacity to enhance energy security and lower regional emissions.

Executives from GE Energy and ECOS signed the new project agreement during today's celebration of the fifth anniversary of GE Global Research Europe in Munich, a leader in industrial energy efficiency research. The event was attended by a delegation of business leaders and government officials led by GE Chairman and CEO Jeffrey Immelt and Bavarian State Minister and Head of the Bavarian State Chancellery Siegfried Schneider.

GE's new ORC system will allow ECOS to capture more waste heat created by its 7.2 MW Bioplinarna Lendava biogas plant. The extra thermal power will be used to produce steam, which in turn will help generate enough electricity to support 300 European homes without using additional fuel.

"Our goal is to demonstrate that dramatic improvements in energy efficiency and output can be achieved in gas engine power plants through enhanced waste-heat recovery", said ECOS Director and Owner Jože Pavlinjek. "We believe our collaboration with GE will help lead to the expanded use of cogeneration and renewable biogas solutions in support of European Union directives designed to improve regional energy security and combat global climate change."

The pilot ORC system will be installed on one of the three GE ecomagination-certified Jenbacher J420 biogas engines that have powered ECOS' Bioplinarna Lendava plant since June 2008. The ORC technology will boost the Jenbacher unit's electrical efficiency by an estimated five percentage points.

Landfill gas and other renewable biogas projects are among the prime candidates for ORC systems, especially in countries - including those in Europe - that offer high electricity feed-in tariffs.

“Countries around the world want to increase the use of renewable biofuels to meet their energy security and environmental requirements”, said Prady Iyyanki, CEO of GE’s Jenbacher gas engine business. “Pairing GE’s ‘ORC’ technology with gas engines represents an important innovation in energy efficiency, allowing existing and future onsite power plants around the world to generate extra electricity without consuming additional fuel or creating more emissions.”

ORC systems generally offer enhanced energy efficiency by utilizing organic fluids that have lower boiling points than water to create steam for electricity generation. However, due to technical waste-heat recovery constraints, there had been few gas engine-based ORC applications.

GE’s new gas engine-ORC technology is a milestone for the global energy industry because for the first time, all of the waste heat from an engine’s exhaust gas and cooling cycle can be fully captured and utilized to drive the power plant’s enhanced steam-creation process.

The new technology was developed by GE Global Research Europe and GE Energy’s Jenbacher gas engine business in Austria.

GRC-Europe is a leader in ORC industrial waste-heat innovation. In May 2009, GE unveiled its ORegen Waste Heat Recovery System developed with GE Oil & Gas. When coupled with a simple-cycle gas turbine, the ORegen system generates electricity from waste heat while consuming no additional fuel or water and avoiding associated CO₂ emissions.

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 2008 revenue of \$29.3 billion. Based in Atlanta, Georgia, 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.

About GE

GE is a diversified global infrastructure, finance and media company that is built to meet essential world needs. From energy, water, transportation and health to access to money and information, GE serves customers in more than 100 countries and employs more than 300,000 people worldwide. For more information, visit the company’s Web site at <http://www.ge.com>. GE is Imagination at Work.

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