

FOR IMMEDIATE RELEASE

Greenhouse Gas Technology Center Verifies Ingersoll-Rand Microturbine Performance

New Microturbine Produces On-site Electricity and Heat

RESEARCH TRIANGLE PARK, NC (July 1, 2003) – The Greenhouse Gas Technology Center (GHG Center) today announced that it has independently verified the performance of the IR Power Works™ 70 kW Microturbine System, developed by Ingersoll-Rand (IR) Energy Systems of Portsmouth, New Hampshire.

The IR Power Works System is one of a first generation of small cogeneration systems that integrate microturbine technology with heat recovery in a single device. Electric power is generated with an integrated Ingersoll-Rand microturbine with a nominal power output of 70 kW. Hot exhaust gas exits the unit into the integrated IR heat recovery unit which circulates a propylene glycol and water mixture to capture "free" exhaust heat and produce hot water.

Verification of the IR Power Works was conducted at the Crouse Community Center in Morrisville, New York with support from the U.S. Environmental Protection Agency (EPA) and the New York State Energy Research and Development Authority. The Crouse facility is a 60,000-sq. ft. skilled nursing facility providing care for approximately 120 residents. The IR Power Works system was installed to provide electricity to the facility and provide heat for domestic hot water and space heating.

During performance testing 50.62 kW of electric power was generated at full load and "free" heat was recovered as hot water at a rate of 146 MBtu/hr. Total combined heat and power energy efficiency was 46 percent and the average NO_x emissions were low, 0.86 parts per million.

Emissions from the IR Power Works were compared to emissions that could have occurred if the Crouse Center obtained its electrical power and hot water from conventional sources – grid electricity and an on-site gas-fired boiler. The GHG Center estimates that an average annual emission reduction of 1,333 lbs (34 percent) for NO_x and 211,744 lbs (7 percent) for CO₂ would occur with use of the Power Works.

A synopsis and final independent performance evaluation report can be accessed on the U.S. EPA ETV website at <http://www.epa.gov/etv/verifications/vcenter3-3.html>. Independent verification reports for other microturbines can also be found there.

The GHG Center is a public/private partnership between the U.S. Environmental Protection Agency (EPA) and Southern Research Institute, operating under the EPA's Environmental Technology Verification (ETV) program. The GHG Center looks for promising greenhouse gas mitigation technologies, subjects them to independent third-party performance testing, and provides performance results to the public free of charge. To date, the GHG Center has verified—or is in the process of verifying—24 different environmental and energy technologies that can significantly impact greenhouse gases.

Verifications generally involve the measurement of energy conversion efficiency, air pollution emission rates (e.g., GHGs, criteria pollutants, other pollutants), secondary environmental impacts, electrical power quality, operational availability, cost, payback period, and other variables of interest to purchasers and stakeholders. Technology performance verifications are accomplished using measurement and analysis methods that have been reviewed and approved by independent expert stakeholder panels.

“Once we’ve verified a technology’s performance, not only does the company who developed it benefit, but it gives potential purchasers of the technology some insurance about its worth,” said Stephen Piccot, director of Southern Research’s GHG Center.

Currently, the GHG Center is verifying commercial ready technologies in the following areas: Advanced Electricity Production, Solid and Animal Waste Management, Oil and Gas Production and Transmission, GHG Monitoring, Large Reciprocating Engines, Refrigeration systems, and Transportation technologies. The GHG Center is planning for performance assessments of clean electricity generation technologies including biomass and biogas fuels and additives, new I.C. and Stirling engines, improved fuel cell and microturbine systems, industrial cogeneration and combustion systems, carbon sequestration and monitoring systems, and others.

About Southern Research Institute

Southern Research Institute is an independent, not-for-profit center for scientific research with facilities in Birmingham, Ala., Frederick, Md., and Research Triangle Park, North Carolina. Southern Research provides contract research in the fields of engineering, chemical and biological defense, homeland security, environmental and energy-related research, and pre-clinical drug discovery and drug development. The Institute is affiliated with the University of Alabama at Birmingham (UAB.)

About the EPA

The U.S. Environmental Protection Agency (EPA) uses science to safeguard both human health and the environment. The office of Research and Development (ORD) is the scientific research arm of EPA. ORD’s research helps provide the solid underpinning of science and technology for the Agency. ORD conducts research on ways to prevent pollution, protect human health, and reduce risk. The work at ORD laboratories, research centers, and offices across the country helps improve the quality of air, water, soil, and the way we use resources and builds our understanding of how to protect and enhance the relationship between humans and the ecosystems of Earth.

About NYSERDA

The New York State Energy Research and Development Authority is unique among the states. It was established by law in 1975 to promote energy efficiency, while protecting the environment. Since then, millions of dollars, and hundreds of projects, have advanced electric service delivery, building and transportation use, consumer education, environmental protection, and development of New York’s economy. NYSERDA’s award winning projects foster innovative products and programs that are recognized as a standard for the nation.

Note Regarding Applicants for Technology Verification:

Companies interested in verification testing of their greenhouse gas technologies can download the Application for Testing at the GHG Center website (www.sri-rtp.com) and submit the form as instructed. For additional information, interested persons may contact Stephen Piccot (piccot@sri-rtp.com or 919-806-3456).

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