ClearSign Achieves Major Development Milestone: Demonstrates Technique to Provide Unprecedented Flame Stability up to 1,000,000 Btu/hr

Computer Control of Electrostatic Charge in Flames Could Bring Powerful New Dimension to Design of Next-Generation Combustion Systems

SEATTLE, WA -- (MARKETWIRE) -- 09/27/12 -- ClearSign Combustion Corporation (NASDAQ: CLIR), an emerging leader in combustion and emissions control technology for industrial, commercial and utility markets, reported today that it has successfully demonstrated its proprietary Electrodynamic Combustion Control™ (ECC™) technology operating in a system with a thermal output of 1,000,000 Btus per hour.

According to ClearSign CEO Rick Rutkowski, the scale-up milestone represents a major step in the path to commercializing the company's technology and comes several months ahead of schedule.

"1,000,000 Btu/hr is widely accepted as a standard for demonstrating a commercially relevant scale of industrial burner technology," Rutkowski explained. "Indeed, there are many commercial burners that operate in the range of several hundred thousand Btu/hr to 1,000,000 Btu/hr. Our original target was to demonstrate ECC technology operating at this commercially relevant scale by the end of this year. Not only have we met our goal of 1,000,000 Btu/hr, but we were able to mark this achievement earlier than expected.

"Our goal is to apply our ECC technology to enable combustion systems that deliver a mix of improved energy efficiency and/or process throughput combined with superior environmental performance," Rutkowski added. "Our earlier demonstrations have already attracted significant attention from prospective customers and from several leading combustion system OEMs and engineering and construction firms who have expressed interest in teaming with ClearSign to bring ECC technology to market. I believe this latest demonstration is going to be greeted with enthusiasm by prospective partners and customers in several market segments."

"In June of this year, we demonstrated that a flame can be stabilized and anchored at a selected location by using ClearSign's ECC technology to dramatically accelerate the rate of combustion in a system with a high momentum flame and a thermal output of 400,000 Btu/hr," said ClearSign Chief Technology Officer, Joe Colannino. "We have now successfully scaled this flame attachment effect to our demonstration scale of 1,000,000 Btu/hr.

"In August of this year we used this technique to enable a burner design that was able to reduce emissions of Nitrogen Oxides (NOx) to extremely low levels of 15 parts per million. Our design approach suggests that we may be able to substantially simplify the design of both burners and burner control systems while achieving significant improvements in flame stability when compared to conventional low NOx and ultra-low NOx burners. Flame stability is commercially

important because it can translate directly to meaningful savings in fuel consumption for the many industrial scale systems that utilize these burners.

"Moreover, the novel design of ClearSign's test burner requires no use of flue gas recirculation (FGR) fans and allows for operation with minimal levels of oxygen or excess air. These improvements further compound gains in energy efficiency and savings in capital and operating costs."

The Council of Industrial Boiler Owners (CIBO) 2005 survey indicates that there are approximately 163,000 package boilers in the US inventory. A large and growing percentage of these are regulated by the EPA and regional air quality management districts for emissions of NOx and make use of low NOx or ultra-low NOx burners to meet regulated emissions standards. Pending regulatory deadlines in California for newly tightened NOx standards may lead to substantially increased costs for many system operators.

According to ClearSign, the recent demonstration bears significant implications not only for improved flame stability and reductions in NOx but also for enhanced control of flame shape and flame length. These can be critically important features for optimizing heat transfer efficiency and for maintaining more uniform heat distribution in process heaters such as those used in petrochemical refineries. This technique has potentially broad application in solving costly challenges that constrain both process throughput and plant availability.

"Conventional burners have serious limitations with control of flame shape or flame pattern that can impose costly constraints on plant productivity," said Rutkowski. "Crude heaters, ethylene cracking furnaces and steam methane reformers used to produce hydrogen are all examples of systems where improved control of flame shape and flame length can deliver significant economic value by increasing process throughput and by lengthening the time between maintenance cycles for removal of carbon coke.

"These are good examples of the numerous high-value commercial and industrial applications for which the ability to stabilize a flame and better control flame shape and flame length can be translated to significant design improvements and substantial savings in both capital and operating costs for users."

The company also noted that it had recently filed its 45th patent application and reiterated its goal to file patents covering more than 150 inventions relating to novel ways of applying electrostatic fields in the design of new burner architectures and in the construction, retrofit, control and operation of large scale combustion systems.

A video of the flame attachment effect (filmed at 300,000 Btu/hr) may be viewed at the ClearSign website: www.clearsign.com

About ClearSign Combustion Corporation

ClearSign Combustion Corporation designs and develops technologies that aim to improve key performance characteristics of combustion systems including energy efficiency, emissions control, fuel flexibility and overall cost effectiveness. Our Electrodynamic Combustion Control™ (ECC™) platform technology improves control of flame shape and heat transfer and optimizes the complex chemical reactions that occur during combustion in order to minimize harmful emissions. For more information about the Company, please visit www.clearsign.com

Cautionary note on forward-looking statements

This press release includes forward-looking information and statements within the meaning of the Private Securities Litigation Reform Act of 1995 and the provisions of Section 27A of the Securities Act of 1933, as amended, and Section 21E of the Securities Exchange Act of 1934, as amended. Except for historical information contained in this release, statements in this release may constitute forward-looking statements regarding our assumptions, projections, expectations, targets, intentions or beliefs about future events that are based on management's belief, as well as assumptions made by, and information currently available to, management. While we believe that our expectations are based upon reasonable assumptions, there can be no assurances that our goals and strategy will be realized. Numerous factors, including risks and uncertainties, may affect our actual results and may cause results to differ materially from those expressed in forward-looking statements made by us or on our behalf. Some of these factors include the acceptance of existing and future products, the impact of competitive products and pricing, general business and economic conditions, and other factors detailed in our Quarterly Report on Form 10-Q and other periodic reports filed with the SEC. We specifically disclaim any obligation to update or revise any forward-looking statement whether as a result of new information, future developments or otherwise.

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