

ClearSign Combustion Reports Dramatic Reduction of Nitrogen Oxides (NOx) Using Proprietary Electrodynamic Combustion Control(TM) (ECC(TM)) Technology

A Brand New Technique for the Control of NOx Emissions Could Mean Major Cost Savings and Increased Efficiency for Tens of Thousands of Commercial and Industrial Boilers

SEATTLE, WA -- (MARKETWIRE) -- 06/28/12 -- 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 extraordinary reductions in emissions of Nitrogen Oxides (NOx) using its proprietary Electrodynamic Combustion Control™ (ECC™) technology. The company reports NOx emissions of 15 parts per million (ppm), in a system with thermal output of more than 400,000 Btus per hour. 15 ppm is superior to the NOx reduction performance of most commercially available Low NOx burners (LNBs), and is equivalent or superior to the performance of many Ultra-Low NOx burners (ULNBs) in the market today.

NOx is a criteria pollutant that contributes to ground-level ozone and is regulated by the EPA. In many parts of the United States, NOx emissions levels are required to be below 20 ppm. However, California's South Coast Air Quality Management District, which includes the greater Los Angeles area, has introduced new regulations that come into effect in January of next year requiring boiler operators to further reduce NOx emissions to 9 ppm, and subsequently to under 5 ppm.

According to ClearSign's Chief Technology Officer, Joe Colannino, these standards will be difficult to meet using conventional burner technology alone. Colannino says that this demonstration is a major validation of the burner design improvements enabled by ClearSign's ECC technology, and a key milestone in the path to commercialization.

"This is a very exciting early development," said Colannino. "15 parts per million is a very competitive number for even Ultra-Low NOx burners. These results exceeded our expectations for this stage of development, and help build confidence that we may soon be able to report further performance improvements to surpass this milestone as we progress toward commercialization."

"Not only were we able to dramatically reduce NOx levels," Colannino added, "but our ECC technology allowed us to achieve this with a radically simplified burner design requiring minimal excess air and without the use of any fans or blowers for flue gas recirculation (FGR)."

According to Colannino, most Low NOx burners use complex arrays of multiple gas jets to stage the introduction of fuel and air. In many cases, large fans must also be added to recirculate flue gas in order to reach NOx emissions targets. Unlike these legacy technologies, ClearSign's ECC technology requires minimal excess air, optimizing fuel efficiency while at the same time eliminating the need for these fans, which are expensive and require substantial power to operate.

Colannino also pointed out that because ECC technology can maintain flame stability across a wide operating range, it can enable much higher turndown ratios than competing technologies. This has the effect of significantly increasing fuel efficiency in industrial and commercial settings where boilers are frequently cycled to reflect changes in demand.

In many cases, Low NOx or Ultra-Low NOx burners must also be combined with Selective Catalytic Reduction (SCR) after-treatment systems in order to meet the regulatory standard. This imposes a cost burden that can average several hundred thousand dollars in new capital and construction costs (for a mid-sized industrial boiler) as well as adding recurring operating costs associated with the handling, use and disposal of chemical additives.

"Boiler operators are always focused on achieving NOx emissions standards at the lowest possible cost," offered ClearSign CEO Rick Rutkowski. "We are hearing many prospective customers from multiple segments of industry express grave concern about the escalating cost of complying with ever more stringent regulations."

"This demonstration is a tremendous affirmation of the compelling value proposition of Electrodynamic Combustion Control as it relates to control of NOx emissions," Rutkowski continued. "Our goal is to improve emissions performance to meet even the most stringent standards while at the same time simplifying burner design and eliminating the need for supplemental flue gas recirculation or costly SCR systems."

"We believe that our technology is a powerful tool that our customers may be able to use to reverse the trend of rapidly escalating costs in complying with air quality regulations," Rutkowski said. "We believe that ECC technology offers the potential to dramatically reduce the high recurring cost associated with control of NOx

emissions and will feature a much lower total cost of ownership than current generation technology."

According to the company, reducing NOx emissions is just one of several powerful combustion control effects enabled by ECC technology. The technology can also be used to improve control of flame shape, to reduce or eliminate emissions of multiple pollutants including particulate, NOx and CO (Carbon Monoxide) and to improve both heat transfer efficiency and heat distribution. Each of these effects has significant commercial implications independently and can be combined in many cases to yield even more powerful advantages including increased plant productivity and cost savings.

"Our goal is to turn the economics of emissions control on its head," said Rutkowski. "We believe our technology will enable our customers to reduce multiple types of emissions by suppressing them at the source and at the same time, will increase system efficiency, throughput and overall productivity. The ability to combine increased efficiency with emissions control is unprecedented and, potentially, a sea change. We're talking about a world where environmental compliance is no longer a cost but instead a source of additional profit and return on invested capital. That's great news for both industry and the environment."

Last year, The Mcllvaine Company estimated that global sales of air pollution control equipment in 2011 were \$42 billion. There are approximately 163,000 boilers operating at the commercial and industrial scale in the US.

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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Released June 28, 2012

 [**ClearSign Combustion Reports Dramatic Reduction of Nitrogen Oxides \(NOx\) Using Proprietary Electrodynamic Combustion Control\(TM\)**](#)
(39 KB)

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