

CLEARSIGN COMBUSTION CORP  
Form 10-K  
March 11, 2014

UNITED STATES  
SECURITIES AND EXCHANGE COMMISSION  
Washington, D.C. 20549

FORM 10-K

(Mark One)

ANNUAL REPORT UNDER SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934

For the fiscal year ended December 31, 2013

OR

TRANSITION REPORT UNDER SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934

For the transition period from \_\_\_\_\_ to \_\_\_\_\_

Commission File Number 001-35521

CLEARSIGN COMBUSTION CORPORATION  
(Exact name of registrant as specified in its charter)

WASHINGTON  
(State or other jurisdiction of  
incorporation or organization)

26-2056298  
(I.R.S. Employer  
Identification No.)

12870 Interurban Avenue South  
Seattle, Washington 98168  
(Address of principal executive offices)  
(Zip Code)

(206) 673-4848  
(Registrant's telephone number, including area code)

Securities registered pursuant to Section 12(b) of the Act:

<u>Title of each class</u>	<u>Name of each exchange on which each is registered</u>
Common Stock, par value \$.0001	NASDAQ Capital Market

Indicate by check mark if the registrant is a well-known seasoned issuer, as defined in Rule 405 of the Securities Act.  
Yes  No

Indicate by check mark if the registrant is not required to file reports pursuant to Section 13 or Section 15(d) of the Act. Yes  No



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Indicate by check mark whether the registrant (1) has filed all reports required to be filed by Section 13 or 15(d) of the Securities Exchange Act of 1934 during the preceding 12 months (or for such shorter period that the registrant was required to file such reports); and (2) has been subject to such filing requirements for the past 90 days.

Yes  No

Indicate by check mark whether the registrant has submitted electronically and posted on its corporate Web site, if any, every Interactive Data File required to be submitted and posted pursuant to Rule 405 of Regulation S-T (§ 229.405 of this chapter) during the preceding 12 months (or for such shorter period that the registrant was required to submit and post such files). Yes  No .

Indicate by check mark if disclosure of delinquent filers pursuant to Item 405 of Regulation S-K is not contained herein, and will not be contained, to the best of registrant's knowledge, in definitive proxy or information statements incorporated by reference in Part III of this Form 10-K or any amendment to this Form 10-K.

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, or a smaller reporting company.

Large accelerated filer

Accelerated filer

Non-accelerated filer

Smaller reporting company

(Do not check if a smaller reporting company)

Indicate by check mark whether the issuer is a shell company (as defined in Rule 12b-2 of the Exchange Act).

Yes  No

State the aggregate market value of the voting and non-voting common equity held by non-affiliates computed by reference to the price at which the common equity was last sold, or the average bid and asked price of such common equity, as of the last business day of the registrant's most recently completed second fiscal quarter.

As of June 30, 2013, the aggregate market value of the voting and non-voting common equity held by non-affiliates computed by reference to the last sale price of the common equity was \$59,800,000.

Indicate the number of shares outstanding of each of the registrant's classes of common stock, as of the latest practicable date.

As of March 11, 2014 the issuer has 9,648,134 shares of common stock, par value \$.0001, issued and outstanding.

**Combustion Corporation**

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**SPECIAL NOTE REGARDING FORWARD-LOOKING STATEMENTS AND OTHER INFORMATION  
CONTAINED IN THIS REPORT**

This report contains forward-looking 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. Forward-looking statements give our current expectations or forecasts of future events. You can identify these statements by the fact that they do not relate strictly to historical or current facts. You can find many (but not all) of these statements by looking for words such as “approximates,” “believes,” “hopes,” “expects,” “anticipates,” “estimates,” “projects,” “intends,” “plans,” “would,” “should,” “could,” “may,” or other similar expressions in the report. In particular, these include statements relating to future actions, prospective products, applications, customers, technologies, future performance or results of anticipated products, expenses, and financial results. These forward-looking statements are subject to certain risks and uncertainties that could cause actual results to differ materially from our historical experience and our present expectations or projections. Factors that could cause actual results to differ from those discussed in the forward-looking statements include, but are not limited to:

- our limited cash and our history of losses;
- our ability to achieve profitability;
- our limited operating history;
- emerging competition and rapidly advancing technology in our industry that may outpace our technology;
- customer demand for the products and services we develop;
- the impact of competitive or alternative products, technologies and pricing;
- our ability to manufacture any products we develop;
- general economic conditions and events and the impact they may have on us and our potential customers;
- our ability to obtain adequate financing in the future;
- our ability to continue as a going concern;
- our success at managing the risks involved in the foregoing items; and
- other factors discussed in this report.

The forward-looking statements are based upon management’s beliefs and assumptions and are made as of the date of this report. We undertake no obligation to publicly update or revise any forward-looking statements included in this report. You should not place undue reliance on these forward-looking statements.

Unless otherwise stated or the context otherwise requires, the terms “ClearSign,” “we,” “us,” “our” and the “Company” refer to ClearSign Combustion Corporation.

## **ITEM 1: BUSINESS**

### **Introduction**

We are a development stage company that designs and develops technologies for combustion and emissions control with the aim of improving both the operating economics and the environmental performance of combustion systems. Our solutions are designed to be adaptable into designs for both retrofit applications and new designs. Our core technologies currently include Electrodynamics Combustion Control (ECC) and Duplex burner technologies. ECC technology introduces a computer-controlled electric field into a combustion system in order to better control gas-phase chemical reactions and improve system performance and cost-effectiveness. Duplex burner technology uses a unique two-tier refractory tile configuration to reduce nitrogen oxide gas (NO<sub>x</sub>) emissions without the need for external flue gas recirculation, selective catalytic reduction, or higher excess air operation. To date, our operations have been funded primarily through sales of our common stock. We have earned no significant revenue since inception on January 23, 2008.

We believe that our technology may allow prospective customers to benefit from substantially reduced costs associated with the construction (including refurbishment and upgrade), operation and maintenance of these combustion systems as compared to combustion systems that use no or alternative technology to enhance combustion and control emissions through control of the flame. We also believe that our technology could improve emissions control performance to meet regulatory standards while yielding a significant increase in energy efficiency and a decrease in the cost of compliance with those standards. We believe these features enable our technology to minimize harmful emissions while maximizing system efficiency.

### **Corporate History**

We were incorporated in Washington on January 23, 2008 and we are a development stage company. The address of our corporate headquarters is 12870 Interurban Avenue South, Seattle, Washington 98168 and our telephone number is (206) 673-4848. Our website can be accessed at [www.clearsign.com](http://www.clearsign.com). The information contained on or that may be obtained from our website is not a part of this report. All of our operations are located in the United States.

### **Our Industry**

The combustion and emissions control markets are significant, both in the wide array of industries in which the systems are used and in the amount of money spent in installing and upgrading systems. Nearly two-thirds of the world's total energy consumption is accounted for by combustion of hydrocarbon and other fuels in boilers, furnaces, kilns and turbines. These are used to generate electrical power, to provide heat for all manner of industrial processes and for building heat, and produce more than 50 quadrillion British thermal units (BTUs) of energy annually in the U.S. In order to maximize energy efficiency while keeping pace with regulatory guidelines for air pollution emissions, operators of these systems are continually installing, maintaining and upgrading a variety of costly process control, air pollution control and monitoring systems. In its November 2013 analysis, The McIlvaine Company projected that \$44 billion will be invested globally in 2014 in equipment, instrumentation, and consumables to reduce air pollution. In April 2013, Filtration+Separation magazine estimated the 2014 NO<sub>x</sub> control technology market, a sub-market of the pollution control market, to be \$11 billion of which \$2 billion related to non-utility (e.g. commercial and industrial boiler) applications. Our current target market segments involve petroleum refining and petrochemical processing, packaged boilers, and industrial solid fuel combustors.

### **Our Technology**

*Overview.* While we have not yet commercially deployed our technology and our technology has not been tested or verified by any independent third party, we believe that if the results we have observed in our laboratory testing can be

replicated on a commercial scale, our proprietary technology platform may improve energy efficiency, fuel flexibility and environmental performance for most types of industrial and commercial combustion systems. Based on the results of our laboratory testing, we believe our technology compares favorably with current industry-standard air pollution control and efficiency technologies, such as electrostatic precipitators, fabric filters, selective catalytic reduction devices, low- and ultra-low NOx burners (which address nitrogen oxides), excess air systems and other similar technologies. Such systems account for the majority of combustion energy utilization globally, and are used in:

electrical power generation,  
hydrocarbon and chemical processing industries,  
petroleum refining,  
gas utility turbines, and  
all manner of industrial and commercial steam generation and industrial process heat.



*Technical requirements.* Our ECC technology consists, in its simplest form, of four major components: (a) a computer, (b) standard software delivering proprietary algorithms to (c) a power amplifier (resident outside the combustion chamber) and (d) electrode(s) (inside the combustion chamber). The electrodes are optimized in material and shape to best suit the specific geometry of a given installation. We have also demonstrated a technique to apply ECC to a combustion system without requiring an electrode to have physical contact with the flame.

Our Duplex burner technology consists of a lower story tile, an upper story tile, and fuel nozzles. When the fuel is directed to the lower story tile, the resulting hot gas recirculating there anchors the flame. This allows for start-up operation where furnace temperatures and NO<sub>x</sub> are low. Once the furnace reaches its operating temperature, the fuel is anchored to the upper-story tile. This dramatically reduces NO<sub>x</sub> by greatly increasing the amount of entrained flue gas to dilute NO<sub>x</sub>-forming species without any external fans or power. The greater entrainment also provides more thorough mixing of fuel and air and shorter flames. More thorough mixing of gases homogenizes the combustion zone and reduces peak flame temperatures which cause NO<sub>x</sub> formation. A shorter flame allows for improved heat transfer and operation at a higher capacity since it reduces the possibility of flame impingement and coking in a combustion chamber.

Because the basic components of both technologies are available ‘off the shelf’, or require manufacturing techniques that are well within the current state of the art, we do not depend on technology external to the Company that has not yet been developed.

We believe our technologies can be retrofitted to existing combustion systems to improve their performance and have the potential to provide substantial savings in both capital and operating costs, or, for new-builds, can serve as the basis for fundamental improvements in the design, cost and operation of combustion systems. We believe the economic gain realized by an operator could be significant in both reduced capital expenditures and savings in annual operating and maintenance costs (including reductions in those costs associated with fuel consumption and emissions).

The gain in energy efficiency that we expect our technologies to provide in boilers, solid fuel burners, refinery heaters, and other combustion systems stems in part from our ability to precisely control the flow of hot gases within a gas volume. In most cases, efficiency is increased by increasing heat flux onto targeted surfaces and from reducing heat loss from other surfaces. Additionally, because the formation of pollutants is greatly reduced at the source, the ‘load’ placed on downstream pollution control equipment is also reduced, which we believe could reduce both capital and operating expenses and improve financial return on investment for system operators.

## **Research and Development Plan**

We have tested aspects of our technology on our 5,000 BTU/h and 25,000 BTU/h bench top scale prototypes, our 1 million and 5 million BTU/h research furnaces, our 1 million BTU/h boiler simulator, and our 1 million BTU/h solid fuel furnace. Our technologies have not been tested or verified by any independent third party. Our research and development efforts are now focused on the following sequence of activities:

*Scale-up to commercially relevant sizes.* We have finalized designs and built furnaces and burners at what we believe to be a commercially relevant scale. We have assembled a group of technical advisors comprised of subject matter •experts in the areas of combustion, pollution control, physics, aeronautics, electrodynamics and chemistry. We have identified key potential development partners and customers with whom we are engaged in discussions to apply our technologies to their particular uses at commercially relevant scales, which can be 1 million BTUs or greater.

*Site demonstration at full scale.* We plan to demonstrate our technologies at one or more selected commercial sites. If •achieved, these early site demonstrations will be aimed at retrofitting or replacing one or two burners in multi-burner systems with an eye toward evaluation of our technologies at full scale in one or more operating systems.

*First installation.* Assuming we can successfully demonstrate our technologies by retrofitting or replacing one or two burners in multi-burner systems, we plan to retrofit an entire furnace with our technology applied to all burners. We believe that such a demonstration would provide the impetus for commercial adoption within the applicable industry.

*Enhancement of our intellectual property portfolio.* We have generated inventions that we believe to be patentable subject matter and for which we have been seeking protection through patent application filings. As of December 31, 2013, we have filed 145 patent applications. We cannot predict when our patent applications may result in issued patents, if at all. Further, we may modify a patent application in the future as we develop additional information. As a result, we may create additional patent applications from an existing application, consolidate existing patent applications, abandon applications, or otherwise modify applications based upon our judgment in order to protect our intellectual property in a reasonably cost beneficial manner. No patents have yet been issued to us.

## The Combustion Markets

*Overview.* We are seeking to enter the combustion and emissions control markets and to establish ourselves in highly competitive industries against companies that have both substantially greater financial resources than we do and established products. However, we believe that our technologies could offer a unique and powerful ability to improve energy efficiency and enhance operation while reducing many pollutants at the source. Our markets are comprised of:

*Industrial Combustion*, including:

gas-fired systems, such as refinery and petrochemical heaters, and natural gas-fired boilers solid fuel systems, such as wood and biomass furnaces, industrial coal burners and cement kilns;

*Power Generation*, including:

electric power plants fueled by pulverized coal, and electric power plants utilizing gas turbines.

*Industrial Combustion Systems.* Industrial combustion systems are used to provide energy in the form of direct heat or steam for various manufacturing processes or for the generation of electricity. These systems have several different form factors, depending broadly on whether they burn solid fuels, such as wood, biomass, coal, and municipal solid waste, or gas, such as natural gas, methane, hydrogen, and refinery gas. There are many hundreds of thousands of such systems in operation worldwide. Operators are motivated to improve energy efficiency in order to reduce production costs, even those using opportunity fuels such as wood or biomass. Depending on the system and fuel type, emissions profiles and challenges vary greatly, but the cost of compliance with current regulation of emissions and uncertainty surrounding future regulation is a major business issue facing operators. For example, the U.S. Environmental Protection Agency (EPA) proposed new maximum achievable control technology regulations for boilers (Boiler MACT). Boiler MACT consists of four interrelated rules governing emissions of chemicals identified in the Clean Air Act of 1990, including mercury, dioxin, particulate matter, hydrogen chloride, and carbon monoxide, emitting from an estimated 200,000 boilers nationwide. These complex rules encompass controls and monitoring standards for 11 subcategories of boilers and process heaters that vary in design and fuel type. A broad range of boiler and process heat users, from factories to schools, would be required to conduct emissions testing and comply with standards of control that vary by boiler size, feedstock, and available technologies. In the December 2012 update of its Regulatory Impact Analysis, the EPA estimated the compliance cost of these rules to be \$5.1 billion initially with annual costs thereafter of \$1.4 - \$1.8 billion.

*Power Generation.* In the United States, approximately 45% of the electricity produced for domestic consumption is generated by coal-fired power plants. There are currently 1,436 large-scale coal-fired utility boilers in the US and more than 6,000 worldwide, ranging in size from 50 MW (megawatts) to over 1.5GW (gigawatts, or 1,000 MW). Assuming an average system size of 300MW, a typical air-pollution control train can cost up to \$500 million to install and \$50 million annually to operate. Our target customers in this space would include major utility operators who are facing significant challenges in multiple areas, including the need for improved fuel efficiency, cost-effective remediation of both visible and ultra-fine particulate (PM 2.5), NO<sub>x</sub>, sulfur oxide (SO<sub>x</sub>), carbon monoxide (CO) and carbon dioxide (CO<sub>2</sub>). Additionally, these operators face an uncertain and changing regulatory environment in which the long-term commitment of capital to new projects is extremely difficult. Current combustion and air-pollution control technology is not only very expensive, but it is also inflexible because the plant and air-pollution control equipment are constructed to combust a specific fuel with unique chemical characteristics. Making long-term capital deployments under these circumstances has proved extremely challenging to operators.

## Market Entry

We believe that our technologies could be applied to a wide range of systems in which there is a flame. While this implies a vast array of potential market opportunities, it also requires that we exercise a disciplined approach in comparatively evaluating those opportunities in order to select and prioritize those applications that afford the best mix of time and cost required for development relative to revenue potential. We also aim to select applications in which our technologies quickly offer clear, meaningful, and measurable advantages relative to competing technologies or address unmet market needs.

While we believe that the implementation of ClearSign technologies will eventually enable dramatically improved performance in new system designs, we believe that retrofitting existing systems to improve their performance will provide the quickest path to market. This is because (1) the installed base of existing combustion systems is far greater than the annual number of newly built systems, (2) integrating our technology into a retrofit appears less complex than a new combustion system designed by an original equipment manufacturer (OEM) and (3) the design cycle of a retrofit application appears to be far shorter. We have therefore concluded, based on our preliminary analyses, that the earliest applications of our technologies are likely to involve the retrofit and upgrade of industrial scale combustion systems to improve their environmental performance and energy efficiency, while at the same time making them more adaptable to new fuels and changing operating conditions.

Because of the market needs and opportunities that we currently perceive, we intend to first target the following segments of the industrial combustion market:

process heaters for petroleum refining and petrochemical processing,  
burners in packaged boilers, and  
industrial solid fuel combustors.

## Sales and Marketing Plan

*Partnership Strategy.* We believe that our technology has the potential to transform industries that rely upon combustion, and is broadly applicable in large, scalable, global markets.

We intend to form research and development partnerships to develop our technology within targeted segments. Among the types of potential partners we will seek to establish relationships with both in the U.S. and globally, will be:

Large OEMs interested in our technology;  
End users of OEM products and services interested in advancing the development of our technology in order to address their operational needs;  
Industry research groups, whose mission is the development and testing of new technologies for the eventual benefit of their member companies; and  
Government entities such as the U.S. Department of Energy, who are chartered with the development of longer-range and potentially disruptive energy technologies.

We currently are pursuing a broad development program with the cooperation of two companies engaged in solid fuel combustion. Further, we are seeking other solid fuel dependent companies to participate in this project. Through December 31, 2013, we have received \$93,000 in co-development revenue from Covanta Energy Corporation, a waste-to-energy service company and subsidiary of Covanta Holdings Corporation, and a commercial wood pellet boiler unit from Grandeg, a privately-owned original equipment manufacturer based in Riga, Latvia.

*Pricing Strategy.* Our target markets are characterized by well-established competitors in mature businesses. As a result, pricing in these markets is typically driven more by competitive pricing rather than product benefits. Since we believe that our technology will provide greater and unique benefits in comparison to our competitors, we plan to price our technology based upon the benefits that we believe it will provide in reduced energy consumption, increased efficiency, reduced maintenance and operating costs, and reduced air pollution control costs.

*Channel Structure and Path to Market.* Our path to market could involve any combination of (1) licensing our technologies for either one-time or periodic licensing fees for a period of time within specific fields and/or territories, (2) sale of our intellectual property rights within specific fields and/or territories, or (3) manufacturing of components required to enable our technologies. Since our solutions consist largely of off the shelf components, we do not anticipate that we will require a large manufacturing capacity. To the extent we will require production of specific hardware (electrodes, for example), we plan to rely on outside contract manufacturers, which we believe are widely available and for which a competitive market exists.

## Competition and Barriers to Entry

The industry in which we operate is global in scope and is populated by large, established suppliers of burners and post-combustion air pollution control systems, all of whom possess substantially greater resources than we do. Worldwide, suppliers of burners and APC equipment include but are not limited to companies such as UOP, Callidus and Maxon (all three are subsidiaries of Honeywell), Babcock and Wilcox, Westinghouse, Eclipse, General Electric, Haldor Topsøe, Hitachi, John Zink Hamworthy Combustion (a subsidiary of Koch Industries and including Coen), Linde, and Fives North American, among others.

These systems include low NO<sub>x</sub> burners, electrostatic precipitators, bag houses, selective catalytic reduction systems and various types of scrubbers. The companies that provide these systems are well established and their combustion and emissions control technologies are based on mature, well-understood technologies that are proven in the market. However, we believe the further development of their technologies will be limited largely to marginal performance improvements. As a consequence of this relatively slow pace of innovation, we believe current technology offerings have become largely commoditized, and differentiation between suppliers is very often based on price. We believe another drawback to conventional combustion control and emissions control technologies is that they are only effective over a very narrow range of thermal output, and are often highly intolerant of any variance to the chemical composition of the fuel. These drawbacks translate to higher costs in the form of reduced fuel efficiency and an inability to cost effectively adapt to market or regulatory conditions by changing fuel feedstocks.

From a customer's perspective, legacy air pollution control technology is viewed as a cost of doing business, and as a means to operate within regulatory requirements and avoid fines. Unlike most other kinds of capital equipment that provide an economic return through enhanced productivity or efficiency, we believe customers of traditional emissions control equipment do not otherwise expect any positive return on these investments.

We are seeking to enter the combustion and emissions control market and to establish ourselves in a highly competitive industry against companies that have both substantially greater financial resources than we do and established products. Because they have been available in the market for many years, our competitors' product offerings may have several advantages. Among these are:

*Availability of trained technicians:* The number of technicians who are able to specify, install and operate our competitors' products will be greater than those who have been trained on our technology.

*Conservative choice:* Because our competitors' technologies are well understood and their performance has been proven over time, customers may perceive their offerings represent a safe, low-risk choice.

*Business relationships:* Because our competitors have established long-standing personal relationships with their customers, they may prefer to continue to do business with one another.

However, if we are able to successfully bring our technology to market, we believe that our technology would be an attractive alternative to the products and solutions offered by companies with which we seek to compete. In particular, we believe that our technology could offer a unique ability to improve energy efficiency and enhance operation while reducing many pollutants at the source. We believe our technology could be capable of reducing the requirement for costly legacy equipment, offering customers the prospect of a positive return on their investment in the form of enhanced efficiency and productivity while reducing emissions to the levels of existing air pollution control technologies such as scrubbers, electrostatic precipitators and fabric filters (bag houses). In particular, we believe our technology could offer the following advantages when compared with the next best alternatives.

*Emissions Reduction from Combustion Sources.* Current technology reduces emissions by using mechanical mixing aids such as swirlers, staging combustion in two or more zones, or treating emissions such as NO<sub>x</sub> after the fact using selective catalytic reduction. In contrast, we believe our technology could:

- enhance mixing with none of the additional pressure drop or power requirements that swirlers demand; and
- reduce NO<sub>x</sub> without reducing turndown or narrowing the burner operating window as staged combustion does or requiring expensive post combustion treatments with chemical additives such as catalytic reduction requires.

*Improving flame shape.* The main goal of virtually all process combustion is to transfer heat to raise steam or enable a chemical reaction, and to do so as efficiently as possible. Conventional technology uses buoyancy (the natural tendency for a flame and heat to rise opposite to the force of gravity) and momentum (fuel mixed with air and forced through a nozzle, as in a torch) as the only tools to shape flames. Unfortunately, momentum effects die out over distance from their source and buoyancy always operates counter to the gravitational field. Moreover, momentum and buoyancy effects often drive wayward flames into process tubes where they cause overheating and potential failure or worse. In contrast, we believe that our technology could allow the use of much stronger body forces that are not limited by orifice diameter and are unaffected by gravitational fields. We believe the result would be better control over flame shape and direction, allowing the process to operate free of the effects of impingement and non-optimal flame structure.

*Enhancing heat-transfer and process efficiency.* The main objective of industrial combustion in furnaces and boilers is to transfer heat to a process fluid. Conventional combustion techniques do their best to optimize flame shape to achieve this end, but we believe conventional combustion techniques have no additional means for enhancing heat transfer. In contrast, we believe that our technology could enhance heat transfer to the process tube independent of flame shape using electrical current, and that the result could be an increase in process efficiency or throughput, which is a critical goal in the industrial combustion industry.

Compared to the products and solutions of companies with which we seek to compete, we believe our technology could provide our potential customers with a lower total cost of ownership, providing the prospect of a positive economic return on investment to systems operators. We believe this would be due to a reduction in their capital and operating expenses, and an increase in energy efficiency.

### **Research and Development Program**

Our research and development program consists of bench- and pilot-scale research anticipating future site demonstrations. The contacts of our management, board of directors and advisory board with potential customers in the petroleum, petrochemical, and industrial steam applications inform our research program. These are supported by memoranda of understanding with potential development partners, customers and research institutions. Our research and development activities make use of employees and consultants that are respective experts in the areas of industrial combustion, statistical experimental design, gas turbines, fluid mechanics, physics of particles and ions, and electric fields. We spent \$1,939,000, including \$88,000 under a co-development agreement, and \$1,184,000 on research and

development for the years ended December 31, 2013 and 2012, respectively.



## Intellectual Property Protection

We are pursuing an aggressive intellectual property strategy including:

*Aggressive invention and ideation.* Thus far we have identified numerous specific inventions that we believe to be novel and patentable. We are pursuing a proven ideation process to enhance and continue these discoveries.

*Development of a strong patent portfolio.* As of December 31, 2013, we have filed 145 patent applications. We cannot predict when our patent applications may result in issued patents, if at all. Further, we may modify a patent application in the future as we develop additional information. As a result, we may create additional patent applications from an existing application, consolidate existing patent applications, abandon applications, or otherwise modify applications based upon our judgment in order to protect our intellectual property in a reasonably cost beneficial manner. No patents have yet been issued to us.

## Government Regulation

Government approval is not required in order for us to sell the principal products or services that we are developing. However, government regulation, particularly environmental regulation, is likely to play a role in shaping our product mix and offerings. Our technology includes enhancement of the combustion process, inclusion of a computer-controlled electric field to selectively promote, suppress, retard or accelerate chemical reactions as desired, and to reduce certain emissions at a lower cost than current air pollution control devices. Field implementation of our technology will therefore require permits from various local, state and federal agencies that regulate mechanical and electrical infrastructure and fire and air pollution control.

We believe that we offer major advances in efficiency and emissions reductions. Efficiency improvements include enhanced mixing, lower excess air requirements, and improved heat transfer to the process. We believe such efficiency improvements would generate market demand regardless of the existing regulatory framework because they could result in savings to businesses that adopt our technology. Moreover, we believe emissions regulations could enhance market demand for technology if such regulation requires a reduction in criteria pollutants such as NO<sub>x</sub>, SO<sub>x</sub>, and CO, or others such as CO<sub>2</sub>, or mercury. In such cases, possible legislation on greenhouse gases, Boiler MACT rules, or general reductions in required criteria pollutant levels could serve our business objectives. Although the timing of such regulation is uncertain, the general trend over the last decades continues to be government-mandated reduction for all criteria pollutants and the addition of new emissions to those regulated. Ultimately, it may be possible for our technology to achieve EPA BACT (Best Available Control Technology) designation. In this case, the availability of our technology itself could accelerate the government's willingness to adopt more stringent environmental regulations. We are not aware of any current or proposed federal, state or local environmental compliance regulations that would have a material detrimental effect on our business objectives. We do not anticipate any major expenditures to be required in order for our technology to comply with any environmental protection statutes.

## Employees

As of March 11, 2014, we had 13 full-time employees and 2 part-time employees. None of these employees are covered by a collective bargaining agreement, and we believe our relationship with our employees is good. We also employ consultants, including technical advisors, on an as-needed basis to supplement existing staff. Consultants and technical advisors provide us with expertise in physics, chemistry, mechanical engineering, aeronautics and other specialized areas of science. Compensation paid to our consultants and technical advisors is negotiated with each individual. Compensation may include cash, shares of our common stock or options or warrants to purchase shares of our common stock or any combination thereof. From inception through December 31, 2013, we have paid to our technical advisors a total of \$159,000 in cash and we have issued 125,000 shares of our common stock and options or

warrants to purchase 42,500 shares of our common stock. When we engage consultants or technical advisors, we typically enter into intellectual property assignment and non-disclosure agreements with them. From time-to-time we enter into written agreements with our technical advisors.

## **Technical Advisors**

We have a group of technical advisors comprised of individuals with expertise which we call upon for assistance and advice in designing, developing, and marketing our technology. Our technical advisors are consultants who are not members of our board of directors and are not vested with any decision-making authority with respect to the Company. The following sets forth the names of our technical advisors with summary biographical information.

### ***Thomas S. Hartwick, Ph.D.***

Dr. Hartwick became an advisor to our Company in January 2008. He has more than 45 years of experience in general management in the US aerospace industry. From 1992 to 1995, Dr. Hartwick led the Satellite Payload Program and System Design Group for TRW. Previously, he was Strategic Plan Manager for Hughes Aircraft Company. Appearing regularly as an expert at various Congressional hearings, Dr. Hartwick currently holds Top Secret (Level III) security clearance with the U.S. Government. Dr. Hartwick serves on a number of academic, government, and industrial boards in a technical management role. Dr. Hartwick serves on three corporate boards and is Vice Chair of the Board on Manufacturing and Engineering Design for the National Academy of Science and Engineering. Dr. Hartwick received a BSc. in Physics from the University of Illinois, a MSc. in physics from the University of California, Los Angeles and a Ph.D. in electrical engineering from the University of Southern California.

### ***Robert E. Breidenthal, Ph.D.***

Dr. Breidenthal became an advisor to our Company in November 2009. A professor at the University of Washington's Department of Aeronautics and Astronautics since 1980, Dr. Breidenthal is a recognized expert in turbulent entrainment, including the high-speed mixing of fuel and oxidant and the high-velocity fluid flow that power jet engines and turbine generators. He has led projects for companies including The Boeing Company, CH2M Hill, ARCO Alaska and PACCAR, and has received research support from the Air Force Office of Scientific Research, the National Science Foundation, NASA and ASEA Brown Boveri, Ltd., of Switzerland. Dr. Breidenthal received a BSc. in Aeronautical Engineering from Wichita State University, and a MSc. and Ph.D. in Aeronautics from the California Institute of Technology.

### ***Uri Shumlak, Ph.D.***

Dr. Shumlak became an advisor to our Company in January 2010. A professor at the University of Washington's Department of Aeronautics and Astronautics since 1994, Dr. Shumlak's expertise includes plasma physics, innovative magnetic plasma confinement for fusion energy, electric propulsion, and theoretical and computational plasma modeling. Dr. Shumlak received a BSc. from Texas A&M University and a Ph.D. in Nuclear Engineering from the University of California, Berkeley.

### ***John C. Kramlich, Ph.D.***

Dr. Kramlich became an advisor to our Company in January 2010. Dr. Kramlich has been a Professor of Mechanical Engineering and the Associate Chair for Academics at the University of Washington's College of Engineering since 1992. His principal technical interests include combustion, with an emphasis on pollutant formation and control, and the numerical and theoretical analysis of turbulent reacting flows involving combustion. Dr. Kramlich's work at the University of Washington has been supported by the Environmental Protection Agency, the Department of Energy, the National Science Foundation, NASA, the Gas Research Institute, and various industrial organizations. Dr. Kramlich received his Ph.D. in Engineering Science from Washington State University.

### ***Swapna Hiray***

Swapna Hiray became an advisor to our Company in April 2008. Ms. Hiray is Senior Business Development Analyst at Intellectual Ventures in Bellevue, Washington, a position she has held since June 2008. Previously, Ms. Hiray was a member of the technology development group at Pratt & Whitney and directed the marketing of Pratt & Whitney's Pulse Detonation Engine (PDE) technology, a new product for the removal of ash deposition from utility and other industrial boilers. Ms. Hiray has a Bachelor of Engineering from College of Engineering, Pune and MBA from the University of Washington Foster School of Business.

## ITEM 1A: RISK FACTORS

*We are subject to various risks that may materially harm our business, prospects, financial condition and results of operations. An investment in our common stock is speculative and involves a high degree of risk. In evaluating an investment in shares of our common stock, you should carefully consider the risks described below, together with the other information included in this report.*

*The risks described below are not the only risks we face. If any of the events described in the following risk factors actually occurs, or if additional risks and uncertainties later materialize, that are not presently known to us or that we currently deem immaterial, then our business, prospects, results of operations and financial condition could be materially adversely affected. In that event, the trading price of our common stock could decline, and you may lose all or part of your investment in our shares. The risks discussed below include forward-looking statements, and our actual results may differ substantially from those discussed in these forward-looking statements.*

### **Risks Related to Our Business**

***We are a company with a limited operating history and our future profitability is uncertain. We anticipate future losses and negative cash flow, which may limit or delay our ability to become profitable.***

We are a company with a limited operating history and limited revenues to date. We may never generate revenues. We have incurred losses since our inception and expect to experience operating losses and negative cash flow for the foreseeable future. As of December 31, 2013, we had a total accumulated deficit of \$13,964,000. We anticipate our losses will continue to increase from current levels because we expect to incur additional costs and expenses related to prototype development, consulting costs, laboratory development costs, marketing and other promotional activities, the addition of engineering and manufacturing personnel, and our continued efforts to form relationships with strategic partners. We may never be profitable.

***If we do not receive additional financing when and as needed in the future, we may not be able to continue our research and development efforts or commence the commercialization of our technology and our business may fail.***

Our business is highly capital-intensive, and requires significant capital investments in order for it to develop. Our cash on hand will likely not be sufficient to meet all of our future needs and we will likely require substantial additional funds in excess of our current financial resources in the future for research, development and commercialization of our technology, to obtain and maintain patents and other intellectual property rights in our technology, and for working capital and other purposes, the timing and amount of which are difficult to ascertain. Until our technology generates revenues sufficient to support our operations, we plan to obtain the necessary working capital for operations through the sale of our securities, but we may not be able to obtain financing in amounts sufficient to fund our business plans. Furthermore, if our target customers are slow to adopt our technology, we may require additional investment capital in order to continue our operations. If we cannot obtain additional funding when and as needed, our business might fail.

***We may be required to raise additional financing by issuing new securities, which may have terms or rights superior to those of our shares of common stock, which could adversely affect the market price of our shares of common stock and our business.***

We will require additional financing to fund future operations, including expansion, capital costs and the costs of any necessary implementation of technological innovations or alternative technologies. We may not be able to obtain financing on favorable terms, if at all. If we raise additional funds by issuing equity securities, the percentage ownership of our then-current shareholders will be reduced. Further, we may have to offer new investors in our equity securities rights that are superior to the holders of common stock, which could adversely affect the market price and

the voting power of shares of our common stock. If we raise additional funds by issuing debt securities, the holders of these debt securities would similarly have some rights senior to those of the holders of shares of common stock, and the terms of these debt securities could impose restrictions on operations and create a significant interest expense for us which could have a materially adverse effect on our business.

***Worldwide economic conditions may adversely affect our business, operating results and financial condition.***

The United States economy continues to experience slower growth. Some financial and economic analysts predict that the world economy may be entering into a period of prolonged slow economic growth characterized by high unemployment, limited availability of credit, increased rates of default and bankruptcy, and decreased consumer and business spending. These developments, if they occur, could negatively affect our business, prospects, operating results and financial condition in a number of ways. For example, worldwide economic developments could have an adverse effect on the global credit markets. Tightening of credit typically results in financing terms that are less attractive to borrowers and, in many cases, the unavailability of certain types of debt financing. If these economic conditions worsen, and if we are required to obtain debt financing during some stage of our development to meet our working capital or other business needs, we may not be able to obtain that financing. Further, even if we are able to obtain the financing we need, it may be on terms that are not favorable to us, with increased financing costs and restrictive covenants. Additionally, slow growth typically results in lower capital spending, reduced new product development, and reduced research. This may make it more difficult for us to introduce new products.

***Market acceptance of our technology and business is difficult to predict. If our technology does not achieve market acceptance, our business could fail.***

Our company and technology are new and unproven. If we are unable to effectively develop and timely promote our technology and gain recognition in our market segment, we may not be able to successfully achieve sales revenue and our results of operations and financial condition would then suffer. Our ability to achieve future revenue will depend highly upon the awareness of our potential customers of our products, services and solutions. While we plan to achieve this awareness over time, there cannot be assurance that awareness of our company and technology will develop in a manner or pace that is necessary for us to achieve profitability in the near term.

Further we cannot predict the rate of adoption or acceptance of our technology by potential customers, thought leaders or prospective channel partners. While we may be able to effectively demonstrate the feasibility of our technology, this does not guarantee the industrial combustion and power generation market will accept it, nor can we control the rate at which such acceptance may be achieved. In certain of our market segments, there is a well-established channel with a limited number of companies engaged in reselling to our target customers. Failure to achieve productive relations with a sufficient number of these prospective partners may impede adoption of our solutions. Additionally, some potential customers in our target industries are historically risk-averse and, on occasion, have been slow to adopt new technologies. If our technology is not accepted in the industrial combustion and power generation market, we may not earn enough by selling or licensing our technology to support our operations, recover our research and development costs or become profitable and our business could fail.

***Our efforts may never demonstrate the feasibility of our product.***

Our research and development efforts remain subject to all of the risks associated with the development of new products based on emerging and innovative technologies, including without limitation unanticipated technical or other problems, our ability to scale our technology to large, industrial applications, conditions in the field during installation and the possible insufficiency of funds for completing development of these products. Technical problems, including those specific to customer site implementation, may result in delays and cause us to incur additional expenses that would increase our losses. If we cannot complete, or if we experience significant delays in completing, research and development of our technology for use in potential commercial applications, particularly after incurring significant expenditures, our business may fail.





***We may fail to adequately protect our proprietary technology, which would allow our competitors to take advantage of our research and development efforts.***

Our long-term success largely depends on our ability to market our technology. We rely on a combination of patent, trade secret and other intellectual property laws, confidentiality and security procedures and contractual provisions to establish and protect our proprietary rights in our technology, products and processes. If we fail to obtain or maintain these protections, we may not be able to prevent third parties from using our proprietary technologies. Our pending or future patent applications may not result in issued patents. In addition, any patents issued to us in the future may not contain claims sufficiently broad to protect us against third parties with similar technologies or products or from third parties infringing such patents or misappropriating our trade secrets or provide us with any competitive advantage. In addition, effective patent and other intellectual property protection may be unenforceable or limited in foreign countries. If a third party initiates litigation regarding the validity of our patents, and is successful, a court could revoke our patents or limit the scope of coverage for those patents.

We also rely upon trade secrets, proprietary know-how and continuing technological innovation to remain competitive. We protect this information with reasonable security measures, including the use of confidentiality and invention assignment agreements with our employees and consultants and confidentiality agreements with strategic partners. It is possible that these agreements may not be sufficient or that these individuals or companies may breach these agreements and that any remedies for a breach will be insufficient to allow us to recover our costs and damages. Furthermore, our trade secrets, know-how and other technology may otherwise become known or be independently discovered by our competitors.

***We may incur substantial costs as a result of litigation or other proceedings relating to patent and other intellectual property rights.***

A third party may sue us or one of our current or future strategic collaborators for infringing its intellectual property rights. Likewise, we may need to resort to litigation to enforce our patent rights or to determine the scope and validity of third-party intellectual property rights. The cost to us of any litigation or other proceeding relating to intellectual property rights, even if resolved in our favor, could be substantial, and the litigation would divert our efforts. Some of our competitors may be able to sustain the costs of complex patent litigation more effectively than we can because they have substantially greater resources. If we do not prevail in this type of litigation, we or our strategic collaborators may be required to pay monetary damages; stop commercial activities relating to our product; obtain one or more licenses in order to secure the rights to continue manufacturing or marketing certain products; or attempt to compete in the market with substantially similar products. Uncertainties resulting from the initiation and continuation of any litigation could limit our ability to continue some of our operations. In addition, a court may require that we pay expenses or damages, and litigation could disrupt our commercial activities.

***We cannot guarantee that any research and development partnership we enter into will be successful.***

We intend to form research and development partnerships to develop our technology within targeted segments. Collaborative arrangements involve risks that participating parties may disagree on business decisions and strategies. These disagreements could result in delays, additional costs, risks of litigation, and failure of the development of our technology within the partnership's combustion market segment. Success of any collaborative arrangements we enter into will depend in part on whether our partners fulfill their contractual obligations satisfactorily. If our partners fail to perform their contractual obligations satisfactorily, we may be unable to make the additional investments or provide the added services that would be required to compensate for that failure. If we are unable to adequately address any such performance issues, our reputation may be materially adversely affected and the customer may exercise its right to terminate a joint project, exposing us to legal liability. Our inability to successfully maintain collaborative relationships, once we enter into them, or to enter into new collaborative arrangements, could have a material adverse effect on our results of operations.

***Changes to environmental regulations could make our technology less desirable.***

The negative environmental impacts of industrial activity have given rise to significant environmental regulation in industrialized countries. These regulations are important incentives in the adoption of technologies like ours. To the extent that environmental regulations in the United States and in other industrialized countries are modified in the future, or even relaxed, our technology may not produce the results required, or may even be unnecessary, to comply with the modified regulations. In that case, our business and results of operations would be materially adversely affected.

***If we are unable to keep up with rapid technological changes, our products may become obsolete.***

The market for alternative energy products is characterized by significant and rapid technological change and innovation. Although we intend to employ our technological capabilities to create innovative products and solutions that are practical and competitive in today's marketplace, future research and discoveries by others may make our products and solutions less attractive or even obsolete compared to other alternatives that may emerge.

***Our technology and its industrial applications have not yet been safety tested.***

There is inherent danger in dealing with the combustion process. There is additional danger in modifying this process in ways that are new and, as yet, untested on a commercial scale. Although we have not yet encountered any areas of risk in the development or testing of our products beyond those already inherent in the combustion process or those particular to an industrial site, the Company may be exposed to liabilities should an industrial accident occur during development, testing, or operation in our laboratory or during field implementation of our technology.

***We will depend on approval from various local, state and federal agencies to implement and operate our technology***

Our technology includes enhancement of the combustion process, inclusion of a computer-controlled electric field to selectively promote, suppress, retard or accelerate chemical reactions as desired, and to reduce certain emissions at a lower cost than current air pollution control devices. Field implementation of our technology will therefore require permits from various local, state and federal agencies that regulate mechanical and electrical infrastructure and fire and air pollution control. Our technology may be subject to heightened scrutiny since it will be new to these governing bodies. As such, there may be delays or rejections in applications of portions of or all of our technology in the individual jurisdictions involved.

***Because our technology has not yet been fully developed or implemented, we are uncertain of our profit margins and whether such profit margins, if achieved, will be able to sustain our business.***

We have neither completed laboratory testing, nor fully developed our product, cost of goods or pricing. As a result, we cannot predict our profit margins. Our operating costs could increase significantly compared to those we currently anticipate due to unanticipated results from the development process, application of our technology to unique or difficult processes, regulatory requirements and particular field implementations. Further, we envision our pricing to be highly dependent on the benefits that our customers believe they will achieve using our products. Accordingly, we cannot predict whether or when we will achieve profitability, and if achieved, the amount of such profit margins.

***Many of our potential competitors have greater resources, and it may be difficult to compete against them.***

The energy industry is characterized by intense competition. Many of our potential competitors have better name recognition and substantially greater financial, technical, manufacturing, marketing, personnel and/or research capabilities than we do. Although at this time we do not believe that any of our potential competitors has technology similar to ours, if and when we release products based on our technology, potential competitors may respond by developing and producing similar products. Many firms in the energy industry have made and continue to make substantial investments in improving their technologies and manufacturing processes. In addition, they may be able to price their products below the marginal cost of production in an attempt to establish, retain or increase market share. Because of these circumstances, it may be difficult for us to compete successfully in the energy market.

***The loss of the services of our key management and personnel or the failure to attract additional key personnel could adversely affect our ability to operate our business.***

A loss of one or more of our current officers or key employees could severely and negatively impact our operations. Of particular note, the loss of services of Richard Rutkowski, Chief Executive Officer and President, or Joseph Colannino, Chief Technology Officer, could significantly harm our business. We have no present intention of obtaining key-man life insurance on any of our executive officers or management. Additionally, competition for highly skilled technical, managerial and other personnel is intense. As our business develops, we might not be able to attract, hire, train, retain and motivate the highly skilled managers and employees we need to be successful. If we fail to attract and retain the necessary technical and managerial personnel, our business will suffer and might fail.

***We are an "emerging growth company" under the JOBS Act of 2012 and we cannot be certain if the reduced disclosure requirements applicable to emerging growth companies will make our common stock less attractive to investors or make it more difficult to raise capital as and when we need it.***

We are an “emerging growth company”, as defined in the Jumpstart Our Business Startups Act of 2012 (“JOBS Act”), and we may take advantage of certain exemptions from various reporting requirements that are applicable to other public companies that are not “emerging growth companies” or smaller reporting companies including, but not limited to, not being required to comply with the auditor attestation requirements of section 404 of the Sarbanes-Oxley Act and reduced disclosure obligations regarding executive compensation in our periodic reports and proxy statements. In addition, emerging growth companies are entitled to take advantage of exemptions from the requirements of holding a nonbinding advisory vote on executive compensation and shareholder approval of any golden parachute payments not previously approved, even though smaller reporting companies were subject to this requirement for the first annual meeting that was held after January 21, 2013. Furthermore, an “emerging growth company” can delay the adoption of certain accounting standards until those standards would otherwise apply to private companies. We cannot predict if investors will find our common stock less attractive because we may rely on these exemptions. If some investors find our common stock less attractive as a result, there may be a less active trading market for our common stock and our stock price may be more volatile and it may be difficult for us to raise additional capital as and when we need it. If we are unable to raise additional capital as and when we need it, our financial condition and results of operation may be materially and adversely affected.

We will remain an “emerging growth company” until December 31, 2017, although we will lose that status sooner if our revenues exceed \$1 billion, if we issue more than \$1 billion in non-convertible debt in a three year period, or if the market value of our common stock that is held by non-affiliates exceeds \$700 million as of any June 30.

### **Risks Related to Owning Our Common Stock**

***The public market for our common stock has been volatile since completion of our initial public offering. This may affect the ability of our investors to sell their shares as well as the price at which they sell their shares.***

We completed our initial public offering in April 2012. Since that time through March 11, 2014, our shares have traded from \$4.00 per share to \$11.75 per share and day-to-day trading has been volatile at times. This volatility may continue or increase in the future. The market price for the shares may be significantly affected by factors such as progress in the development of our technology, agreements with research facilities or co-development partners, commercialization of our technology, variations in quarterly and yearly operating results, general trends in the alternative energy industry, and changes in state or federal regulations affecting us and our industry. Furthermore, in recent years the stock market has experienced extreme price and volume fluctuations that are unrelated or disproportionate to the operating performance of the affected companies. Such broad market fluctuations may adversely affect the market price of our common stock, if a market for it develops.

***We have the right to issue shares of preferred stock. If we were to issue preferred stock, it is likely to have rights, preferences and privileges that may adversely affect the common stock.***

We are authorized to issue 2,000,000 shares of “blank check” preferred stock, with such rights, preferences and privileges as may be determined from time-to-time by our board of directors. Our board of directors is empowered, without shareholder approval, to issue preferred stock in one or more series, and to fix for any series the dividend rights, dissolution or liquidation preferences, redemption prices, conversion rights, voting rights, and other rights, preferences and privileges for the preferred stock. No shares of preferred stock are presently issued and outstanding and we have no immediate plans to issue shares of preferred stock. The issuance of shares of preferred stock, depending on the rights, preferences and privileges attributable to the preferred stock, could adversely reduce the voting rights and powers of the common stock and the portion of the Company’s assets allocated for distribution to

common stock holders in a liquidation event, and could also result in dilution in the book value per share of our common stock. The preferred stock could also be utilized, under certain circumstances, as a method for raising additional capital or discouraging, delaying or preventing a change in control of the Company, to the detriment of our stockholders. We cannot assure you that the Company will not, under certain circumstances, issue shares of its preferred stock.

***We have not paid dividends in the past and have no immediate plans to pay dividends.***

We plan to reinvest all of our earnings, to the extent we have earnings, in order to market our products and to cover operating costs and to otherwise become and remain competitive. We do not plan to pay any cash dividends with respect to our securities in the foreseeable future. We cannot assure you that we would, at any time, generate sufficient surplus cash that would be available for distribution to the holders of our common stock as a dividend.

***Due to the large number of shares of our common stock that are beneficially owned by our officers and directors, management of our Company has significant influence in a number of decisions that may affect our stockholders.***

All decisions with respect to the management of the Company are made by our board of directors and our officers, who beneficially own 23.1% of our common stock as of March 11, 2014, as calculated in accordance with Rule 13d-3 promulgated under the Securities Exchange Act of 1934. Therefore, management has significant influence in electing the board of directors who, in turn, have the power to appoint the officers of the Company and to determine, in accordance with their fiduciary duties and the business judgment rule, the direction, objectives and policies of the Company including, without limitation, the purchase of businesses or assets; the sale of all or a substantial portion of the assets of the Company; the merger or consolidation of the Company with another corporation; raising additional capital through financing and/or equity sources; the retention of cash reserves for future product development, expansion of our business and/or acquisitions; the filing of registration statements with the Securities and Exchange Commission for offerings of our capital stock; and transactions which may cause or prevent a change in control of the Company or its winding up and dissolution.

***Sales of additional shares of our common stock, including by us or our directors and officers following expiration or early release of a two month lock-up, could cause the price of our common stock to decline.***

Sales of substantial amounts of our common stock in the public market, or the availability of such shares for sale, by us or others, including the issuance of common stock upon exercise of outstanding options, could adversely affect the price of our common stock. In connection with a registered direct offering of our common stock in March 2014, we and our directors and officers have entered into lock-up agreements through May 5, 2014 (which period may be extended under certain circumstances). We and our directors and officers may be released from lock-up prior to the expiration of the lock-up period at the sole discretion of the placement agent, Brean Capital, LLC. Upon expiration or earlier release of the lock-up, we and our directors and officers may sell shares into the market, which could adversely affect the market price of shares of our common stock.

***We have a significant number of options and warrants outstanding and we may issue additional options in the future to employees, officers, directors, independent contractors and agents. Sales of the underlying shares of common stock could adversely affect the market price of our common stock.***

As of December 31, 2013, we had outstanding options and warrants for the purchase of 565,765 and 543,959 shares of common stock, respectively. Further, in February 2014 we granted additional options for the purchase of 122,880 shares of common stock and in March 2014 we issued 20,313 warrants to our placement agent, Brean Capital, LLC, in connection with a registered direct offering of our common stock. Under the ClearSign Combustion Corporation 2011 Equity Incentive Plan (the "Plan"), we have the ability to grant awards of options to employees, officers, directors, independent contractors and agents. Furthermore, as of March 11, 2014, we have reserved an additional 114,049 shares of common stock for such awards and the Plan provides that this number may increase quarterly by an amount of up to 10% of the number of shares issued by the Company each quarter. Certain holders may sell these shares in the public markets from time to time, without limitations on the timing, amount or method of sale. If our stock price rises, the holders may exercise their warrants and options and sell a large number of shares. This could cause the market price of our common stock to decline.





*We have incurred and will incur significant costs as a result of being a public company that reports to the Securities and Exchange Commission and our management is required to devote substantial time to meet compliance obligations.*

As a public company reporting to the Securities and Exchange Commission, we incur significant legal, accounting, investor relations, printing, board compensation, and other expenses that we did not incur as a private company. These costs totaled \$1,054,000 in 2013 and \$807,000 from April 25, 2012, the date of our initial public offering, to December 31, 2012. We are subject to the reporting requirements of the Securities Exchange Act of 1934 and the Sarbanes-Oxley Act of 2002 (with the exception of the requirement of auditor attestation of internal control over financial reporting), as well as rules subsequently implemented by the Commission that impose significant requirements on public companies, including requiring establishment and maintenance of effective disclosure and financial controls and changes in corporate governance practices. In addition, on July 21, 2010, the Dodd-Frank Wall Street Reform and Protection Act was enacted. There are significant corporate governance and executive compensation-related provisions in the Dodd-Frank Act that as we grow could increase our legal and financial compliance costs, make some activities more difficult, time-consuming or costly and may also place undue strain on our personnel, systems and resources. Our management and other personnel continually devote a substantial amount of time to these compliance initiatives. In addition, these rules and regulations may make it more difficult and more expensive for us to obtain director and officer liability insurance, and we may be required to accept reduced policy limits and coverage or incur substantially higher costs to obtain the same or similar coverage. As a result, it may be more difficult for us to attract and retain qualified people to serve on our board of directors, our board committees or as executive officers.

*Our charter documents and Washington law may inhibit a takeover that shareholders consider favorable.*

Provisions of our Articles of Incorporation and bylaws and applicable provisions of Washington law may delay or discourage transactions involving an actual or potential change in our control or change in our management, including transactions in which shareholders might otherwise receive a premium for their shares, or transactions that our shareholders might otherwise deem to be in their best interests. The provisions in our Articles of Incorporation and bylaws:

- authorize our board of directors to issue preferred stock without shareholder approval and to designate the rights, preferences and privileges of each class; if issued, such preferred stock would increase the number of outstanding shares of our capital stock and could include terms that may deter an acquisition of us;

- limit who may call shareholder meetings;

- do not provide for cumulative voting rights; and

- provide that all vacancies may be filled by the affirmative vote of a majority of directors then in office, even if less than a quorum, unless the vacant office is to be held by a director elected by the holders of one or more classes or series of shares entitled to vote thereon, in which case the vacancy can be filled only by the vote of the holders of such class or series.

In addition, Chapter 23B.19 of the Washington Revised Code generally limits our ability to engage in any business combination with a person who beneficially owns 10% or more of our outstanding voting stock unless certain conditions are satisfied. This restriction lasts for a period of five years following the share acquisition. These provisions may have the effect of entrenching our management team and may deprive you of the opportunity to sell your shares to potential acquirers at a premium over prevailing prices. This potential inability to obtain a control premium could reduce the price of our common stock.

#### **ITEM 1B: UNRESOLVED STAFF COMMENTS**

None.

**ITEM 2: PROPERTIES**

Our principal office is located at 12870 Interurban Avenue South, Seattle, Washington. We currently lease approximately 9,200 square feet of office and laboratory space under a triple net lease which expires in February 2017. Current monthly minimum rent is \$11,058 and increases by approximately 3% annually.

**ITEM 3: LEGAL PROCEEDINGS**

We are not a party to any pending legal proceedings.

**ITEM 4: MINE SAFETY DISCLOSURES**

Not applicable.

## ITEM 5: MARKET FOR REGISTRANT'S COMMON EQUITY, RELATED STOCKHOLDER MATTERS AND ISSUER PURCHASES OF EQUITY SECURITIES

Our common stock is quoted under the symbol CLIR on the NASDAQ Capital Market. Trading of our common stock on the NASDAQ Capital Market began on April 25, 2012. The range of high and low sales prices of our common stock since April 25, 2012 are presented below.

	2013		2012	
	High	Low	High	Low
First quarter	\$ 7.13	\$ 4.29	n/a	n/a
Second quarter	\$ 10.78	\$ 6.80	\$ 9.75	\$ 4.00
Third quarter	\$ 9.67	\$ 6.95	\$ 7.79	\$ 5.50
Fourth quarter	\$ 11.45	\$ 5.92	\$ 8.75	\$ 4.01

According to our transfer agent, as of March 11, 2014 we had approximately 253 shareholders of record. This number does not include an indeterminate number of shareholders whose shares are held by brokers in street name. Our stock transfer agent is VStock Transfer, LLC, 77 Spruce Street, Suite 201, Cedarhurst, NY 11516 and their phone number is 212-828-8436.

### *Dividends*

We have not paid any cash dividends on our common stock since our inception and do not anticipate paying any cash dividends in the foreseeable future. We plan to retain our earnings, if any, to provide funds for the expansion of our business.

### *Securities Authorized for Issuance under Equity Compensation Plans*

The table below provides information as of December 31, 2013 regarding the compensation plans (2011 Equity Incentive Plan and 2013 Consultant Stock Plan) under which equity securities of ClearSign are authorized for issuance.

Plan category	Number of securities to be issued upon exercise of outstanding options, warrants and rights (a)	Weighted-average exercise price of outstanding options, warrants and rights (b)	Number of securities remaining available for future issuance under equity compensation plans (excluding securities reflected in column (a)) (c)
Equity compensation plans approved by security holders	645,765	\$ 3.02	249,736
Equity compensation plans not approved by security holders	-	-	-
	645,765		249,736

The above schedule excludes stock grants of 175,799 and 11,250 shares under the 2011 Equity Incentive Plan and the 2013 Consultant Stock Plan, respectively, each of which was approved by the security holders.

### *Recent Issuances of Unregistered Securities*

In November 2011 we filed a registration statement, number 333-177946, with the Securities and Exchange Commission to register an offering of 3 million shares of our common stock, with an option granted to the underwriter to sell an additional 450,000 shares of our common stock (the “overallotment”). The registration statement was declared effective on April 24, 2012. The offering closed on April 30, 2012 and the offering of the overallotment closed on May 15, 2012. The common stock was offered at a price of \$4 per share. All of the shares of common stock, including the overallotment, were sold. We raised a total of \$13,800,000 in gross proceeds in the offering and received approximately \$11,200,000 after expenses. Through December 31, 2013, the net proceeds from the offering were used as follows: approximately \$2,000,000 for the purchase of a 30-day certificate of deposit, \$658,000 increased cash and money market funds, \$6,731,000 for operations, \$548,000 for capital expenditures primarily related to research and development machinery and equipment, \$1,336,000 for patents, \$238,000 for the payment of accrued compensation, and \$129,000 for the repayment of short term indebtedness. None of the proceeds were used for construction of plant, building and facilities, the purchase of real estate, or the acquisition of any business.

**ITEM 6: SELECTED FINANCIAL DATA.**

As a smaller reporting company we are not required to provide this information.

## **ITEM 7: MANAGEMENT'S DISCUSSION AND ANALYSIS OF FINANCIAL CONDITION AND RESULTS OF OPERATIONS**

*The following discussion and analysis of our financial condition and results of operations should be read in conjunction with the audited financial statements and related notes included elsewhere in this Annual Report on Form 10-K. In addition to historical information, this discussion and analysis here and throughout this Form 10-K contains forward-looking statements that involve risks, uncertainties and assumptions. Our actual results may differ materially from those anticipated in these forward-looking statements.*

### **OVERVIEW**

We are a development stage company located in Seattle, Washington that designs and develops technologies that aim to improve both the energy efficiency and emission control characteristics of combustion systems. Our core technologies include our Electrodynamic Combustion Control (ECC) and Duplex technologies. Our ECC technology introduces a computer-controlled electric field into a combustion system in order to better control gas-phase chemical reactions and improve system performance and cost-effectiveness. Our Duplex technology uses a unique refractory tile to homogenize the flame temperature and achieve very low emissions without the need of external flue gas recirculation, selective catalytic reduction, or higher excess air operation. To date, our operations have been funded primarily through sales of our common stock. We have earned no significant revenue since inception on January 23, 2008.

### **Plan of Operation**

We are pursuing development of our technology to enable future sales. These activities entail laboratory research, where we have successfully demonstrated our proprietary technology operating in our research facility with thermal output of 1,000,000 BTUs per hour, and business development and marketing activities with established manufacturers and other entities that use boilers, solid fuel burners, refinery heaters, and other combustion systems. We intend to enter into collaborative arrangements which would enable us to work closely with established companies in specific industries to apply developed solutions in laboratory and field settings. We currently are pursuing a broad development program with the cooperation of two companies involved in solid fuel combustion. Further, we are seeking other solid fuel dependent companies to participate in this project. Through December 31, 2013, we have received \$93,000 in co-development revenue from Covanta Energy Corporation, a waste-to-energy service company and subsidiary of Covanta Holding Corporation, and a commercial wood pellet boiler unit from Grandeg, a privately-owned original equipment manufacturer based in Riga, Latvia. However, there is no assurance that additional revenues will be realized, terms will be reached, or a final agreement executed between us and either of these companies.

In April and May 2012, we completed an initial public offering (IPO) of our common stock whereby we sold 3,450,000 shares of common stock at \$4.00 per share, which included the exercise of the underwriter's overallotment option, resulting in gross proceeds of \$13.8 million and, after deducting certain costs paid with common stock, net proceeds of \$11.6 million. The net proceeds have been used as follows through December 31, 2013: approximately \$2,000,000 for the purchase of short-term certificates of deposit, \$658,000 increased cash and money market funds, \$6,731,000 for operations, \$548,000 for capital expenditures primarily related to research and development machinery and equipment, \$1,336,000 for patents, \$238,000 for the payment of accrued compensation, and \$129,000 for the repayment of short term indebtedness. We expected the net proceeds from the IPO to be sufficient to fund our activities at least through April 2014.

In March 2014, we completed a registered direct offering of our common stock whereby we sold 812,500 shares of common stock at \$8.00 per share resulting in gross proceeds of \$6.5 million and net proceeds of approximately \$5.7 million. We currently intend to use the net proceeds from this offering as follows: approximately \$2 million for

research and development including capital expenditures, approximately \$1 million for protection of intellectual property, approximately \$1 million for business development and marketing, and the balance for working capital and general corporate purposes. We expect the net proceeds from the offering to be sufficient to fund our activities at least through January 2015.

Our anticipated costs include employee salaries and benefits, compensation paid to consultants, capital costs for research and other equipment, costs associated with development activities including travel and administration, legal expenses, sales and marketing costs, general and administrative expenses, and other costs associated with an early stage, publicly-traded technology company. We currently have 13 full-time employees and 2 part-time employees. We anticipate continuing to increase the number of employees required to support our activities in the areas of research and development, sales and marketing, and general and administrative functions. We expect to incur consulting expenses related to technology development commensurate with our current levels and we expect to incur increasing expenses to protect our intellectual property. We expect capital expenditures to be approximately \$0.5 million annually, but these are highly dependent on the nature of the operations where co-development activities are ongoing.

The amount that we spend for any specific purpose may vary significantly, and could depend on a number of factors including, but not limited to, the pace of progress of our commercialization and development efforts, actual needs with respect to product testing, development and research, market conditions, and changes in or revisions to our marketing strategies.

Research and development of new technologies is, by its nature, unpredictable. Although we will undertake development efforts with commercially reasonable diligence, there can be no assurance that the net proceeds from our securities offerings will be sufficient to enable us to develop our technology to the extent needed to create future sales to sustain operations. If the net proceeds from these offerings are insufficient for this purpose, we will consider other options to continue our path to commercialization, including, but not limited to: additional financing through follow-on equity offerings, debt financing, co-development agreements, sale or licensing of developed intellectual or other property, or other alternatives.

If management is unable to implement its proposed business plan or employ alternative financing strategies, it does not presently have any alternative proposals. In that case, we may be required to scale back our development plans by reducing expenditures for employees, consultants, business development and marketing efforts, and other envisioned expenditures or curtail or even suspend our operations.

We cannot assure that our technology will be accepted, that we will ever earn revenues sufficient to support our operations, or that we will ever be profitable. Furthermore, we have no committed source of financing and we cannot assure that we will be able to raise money as and when we need it to continue our operations. If we cannot raise funds as and when we need them, we may be required to severely curtail, or even to cease, our operations.

## **CRITICAL ACCOUNTING POLICIES**

The following discussion and analysis of financial condition and results of operations is based upon our financial statements, which have been prepared in conformity with accounting principles generally accepted in the United States of America. Certain accounting policies and estimates are particularly important to the understanding of our financial position and results of operations and require the application of significant judgment by our management or can be materially affected by changes from period to period in economic factors or conditions that are outside of our control. As a result, they are subject to an inherent degree of uncertainty. In applying these policies, our management uses their judgment to determine the appropriate assumptions to be used in the determination of certain estimates. Those estimates are based on our historical operations, our future business plans and projected financial results, the terms of existing contracts, our observance of trends in the industry, information provided by our customers and information available from other outside sources, as appropriate. See Note 2 to our unaudited condensed financial statements for a more complete description of our significant accounting policies.

Development Stage Enterprise. The Company is a development stage company as defined in Financial Accounting Standards Board (FASB) Accounting Standards Codification (ASC) 915, *Development Stage Entities*. The Company

is devoting substantially all of its present efforts to design and develop new technologies in combustion systems and its planned principal operations have not yet commenced. The Company has not generated any significant revenues from operations and has no assurance of any future revenues. All losses accumulated since January 23, 2008 have been considered as part of the Company's development stage activities.



**Revenue Recognition.** The Company recognizes revenue on co-development agreements using the percentage of completion method. Under this method, the completion percentage is determined by dividing costs incurred to date by total estimated project costs. Since our projects will require technological development to complete, which by its nature is difficult to predict, the actual cost required to complete contracted work may vary from estimates. Estimated project costs are revised regularly which can alter the reported level of project profitability. Any estimated project losses are recognized in the current reporting period. Customer billings are recorded when cash receipts are probable and in accordance with the underlying co-development contract. If billings exceed recognized revenue, the difference is recorded as a current liability, while any recognized revenues exceeding billings are recorded as a current asset. Recognized revenues are subject to revisions as the contract progresses to completion and actual revenue and cost become certain. Revisions in revenue estimates are reflected in the period in which the facts that give rise to the revision become known.

**Cost of Revenue.** Cost of co-development revenue includes both direct and allocated indirect costs of completing the scope of work of co-development agreements. Direct costs include labor, materials and other costs incurred directly in fulfilling co-development agreements. Indirect costs include labor, rent, depreciation and other costs associated with operating the Company. Due to the nature of the work involved, the cost of co-development projects may fluctuate substantially from period to period.

**Research and Development.** The cost of research and development is expensed as incurred. Research and development costs consist of salaries, benefits, share based compensation, consulting fees, rent, utilities, depreciation, and consumables.

**Stock-Based Compensation.** The costs of all employee stock options, as well as other equity-based compensation arrangements, are reflected in the financial statements based on the estimated fair value of the awards on the grant date. That cost is recognized over the period during which an employee is required to provide service in exchange for the award. Stock compensation for stock granted to non-employees is determined as the fair value of the consideration received or the fair value of equity instruments issued, whichever is more reliably measured.

**Fair Value of Financial Instruments.** Fair value is the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date. Assets and liabilities measured at fair value are categorized based on whether or not the inputs are observable in the market and the degree that the inputs are observable. The categorization of financial assets and liabilities within the valuation hierarchy is based upon the lowest level of input that is significant to the fair value measurement.

The Company's financial instruments primarily consist of cash and cash equivalents, accounts payable and accrued expenses. As of the balance sheet dates, the estimated fair values of the financial instruments were not materially different from their carrying values as presented on the balance sheets. This is primarily attributed to the short maturities of these instruments. The Company did not identify any other non-recurring assets and liabilities that are required to be presented in the balance sheets at fair value.

## **RESULTS OF OPERATIONS**

### **Comparison of the Years Ending December 31, 2013 and 2012**

*Revenue, Cost of Revenue, and Gross Profit.* The Company reported \$93,000 of revenue resulted from a solid fuel burner co-development project with Covanta Energy Corporation, a waste-to-energy service company and subsidiary of Covanta Holding Corporation. The gross profit of the project was immaterial. The Company had no revenues during the year ended December 31, 2012.

*Operating Expenses.* Operating expenses increased by \$1,091,000 to \$5,301,000 in 2013 compared to 2012. The Company increased its research and development expenses by \$667,000 to \$1,851,000 for 2013. R&D expenses rose due primarily to the addition of personnel hired as a result of increased research activities. In addition to the \$334,000 increase in compensation expense to \$1,000,000, the increase to R&D expenses included a \$271,000 increase, to \$300,000, to laboratory expenses for build-to-suit equipment and expendables. G&A expenses increased by \$424,000 to \$3,450,000 for 2013. This increase resulted primarily from an increase in business development and marketing consulting costs of \$247,000, to \$386,000, and an increase in the expense of operating as a public company for an entire year, which increased by \$247,000 to \$1,054,000.

*Loss from Operations.* Due to the increase in operating expenses, our loss from operations increased during 2013 by \$1,086,000, to \$5,296,000.

*Net Loss.* Primarily as a result of the increase in operating expenses, our net loss for 2013 was \$5,285,000 as compared to a net loss of \$4,189,000 for 2012, resulting in a \$1,096,000 increase in the net loss.

## **Liquidity and Capital Resources**

At December 31, 2013, our cash and cash equivalent balance totaled \$2,688,000 compared to \$8,027,000 at December 31, 2012. This cash reduction reflected our continued costs in research and development of our technology and our business development and marketing efforts in forming co-development agreements to enable product commercialization and future revenue. In March 2014, we completed the sale of 812,500 shares of our common stock resulting in net proceeds of approximately \$5.7 million. We expect our cash to be sufficient to fund our activities at least through January 2015. Although we are pursuing co-development agreements, there is no assurance that they will be adequate to fund our operations and to commercialize our technology. To the extent co-development agreement funding is insufficient for these purposes, we may undertake offerings of our securities, debt financing, selling or licensing our developed intellectual or other property, or other alternatives. The Company filed a Form S-3 shelf registration statement with the Securities and Exchange Commission (SEC) on May 6, 2013 that was declared effective on May 30, 2013. Following the offering that closed in March 2014, the registration statement allows the Company to offer up to an aggregate of \$23,500,000 of common stock, preferred stock or warrants from time to time as market conditions permit. This equity funding would be used to enable further investment in our technology and product development and to maintain a strong balance sheet as we pursue strategic joint development and marketing relationships and prepare to pursue significant opportunities in various segments of the market. This information does not constitute an offer of any securities for sale.

At December 31, 2013, our current assets were in excess of current liabilities resulting in working capital of \$1,923,000 compared to \$7,643,000 at December 31, 2012. This resulted primarily from cash used for operations in 2013 which served to reduce our cash and cash equivalent balance by \$5,339,000 and an increase in accrued compensation of \$418,000 as 2013 bonuses were accrued for payment in 2014 whereas 2012 bonuses were paid in 2012.

Operating activities for 2013 resulted in cash outflows of \$4,297,000 which were due primarily to the loss for the period of \$5,285,000, offset primarily by net changes in working capital, exclusive of cash, of \$381,000 related primarily to the timing of year-end bonus compensation, services and compensation paid with common stock of \$252,000, share based compensation from the Company's Equity Incentive Plan of \$146,000, and depreciation expense of \$209,000. Operating activities for 2012 resulted in cash outflows of \$3,188,000 which were due primarily to the loss for the period of \$4,189,000, offset primarily by net changes in working capital, exclusive of cash, of \$575,000 related primarily to the IPO and the timing of year-end expenditures, services and compensation paid with common stock of \$175,000, share based compensation from the Company's Equity Incentive Plan of \$135,000, and other non-cash expenses of \$116,000.

Investing activities for 2013 and 2012 resulted in cash outflows of \$1,081,000 and \$868,000, respectively. Development of capitalized patents and other intangible assets for 2013 and 2012 resulted in cash outflows of \$845,000 and \$531,000, respectively. Acquisition of fixed assets for 2013 and 2012 resulted in cash outflows of \$236,000 and \$337,000, respectively, and related primarily to research and development equipment.

Financing activities for 2013 resulted in \$39,000 of cash inflows from the exercise of a warrant to purchase 17,409 common shares of stock at \$2.20 per share. Financing activities for 2012 resulted in \$11,153,000 of cash inflows related primarily to net cash generated from the IPO of \$11,201,000 offset by the extinguishment of all debt totaling \$48,000 from the IPO proceeds.

## **Off-Balance Sheet Transactions**

We do not have any off-balance sheet transactions.

## **Trends, Events and Uncertainties**

**Claim by Perkins Coie LLP**

Our former legal advisors, Perkins Coie LLP, previously advised us in March 2012 that they believe TWB Investment Partnership II, L.P., a party related to Perkins Coie LLP, has the right to acquire 25,250 shares of our common stock at \$0.02 per share pursuant to an engagement letter dated December 4, 2007. We denied the claim since, among other defenses, we believe we entered into a full settlement of all amounts owed to Perkins Coie LLP in November 2011. There has been no further communication with Perkins Coie LLP regarding the matter since March 2012.

**ITEM 7A: QUANTITATIVE AND QUALITATIVE DISCLOSURES ABOUT MARKET RISK**

As a smaller reporting company we are not required to provide this information.

**ITEM 8: FINANCIAL STATEMENTS AND SUPPLEMENTARY DATA**

**ClearSign Combustion Corporation**

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**REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM**

To the Board of Directors and Stockholders  
of ClearSign Combustion Corporation

We have audited the accompanying balance sheets of ClearSign Combustion Corporation (a development stage company) (the “Company”) as of December 31, 2013 and 2012, and the related statements of operations, stockholders’ equity (deficit), and cash flows for each of the years in the two-year period ended December 31, 2013, and for the period from inception (January 23, 2008) through December 31, 2013. The Company’s management is responsible for these financial statements. Our responsibility is to express an opinion on these financial statements based on our audits.

We conducted our audits in accordance with the standards of the Public Company Accounting Oversight Board (United States). Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement. The Company is not required to have, nor were we engaged to perform, an audit of its internal control over financial reporting. Our audits included consideration of internal control over financial reporting as a basis for designing audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the Company’s internal control over financial reporting. Accordingly, we express no such opinion. An audit also includes examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements, assessing the accounting principles used and significant estimates made by management, as well as evaluating the overall financial statement presentation. We believe that our audits provide a reasonable basis for our opinion.

In our opinion, the financial statements referred to above present fairly, in all material respects, the financial position of the Company as of December 31, 2013 and 2012, and the results of its operations and its cash flows for each of the years in the two-year period ended December 31, 2013, and for the period from inception (January 23, 2008) through December 31, 2013, in conformity with accounting principles generally accepted in the United States of America.

/s/ GUMBINER SAVETT INC.

March 11, 2014  
Santa Monica, California

**ClearSign Combustion Corporation**  
**(a Development Stage Company)**

**Balance Sheets**

	December 31, 2013	2012
<b>ASSETS</b>		
Current Assets:		
Cash and cash equivalents	\$ 2,688,000	\$ 8,027,000
Prepaid expenses	118,000	60,000
Total current assets	2,806,000	8,087,000
Fixed assets, net	427,000	400,000
Patents and other intangible assets	1,459,000	618,000
Other assets	10,000	10,000
Total Assets	\$ 4,702,000	\$ 9,115,000
<b>LIABILITIES AND STOCKHOLDERS' EQUITY</b>		
Current Liabilities:		
Accounts payable	\$ 297,000	\$ 276,000
Accrued compensation and taxes	586,000	168,000
Total current liabilities	883,000	444,000
Deferred rent	31,000	35,000
Total liabilities	914,000	479,000
Commitments and Contingencies		
Stockholders' Equity:		
Preferred stock, \$0.0001 par value, zero shares issued and outstanding	-	-
Common stock, \$0.0001 par value, 8,810,674 and 8,752,015 shares issued and outstanding at December 31, 2013 and 2012, respectively	1,000	1,000
Additional paid-in capital	17,751,000	17,314,000
Deficit accumulated in the development stage	(13,964,000)	(8,679,000)
Total stockholders' equity	3,788,000	8,636,000
Total Liabilities and Stockholders' Equity	\$ 4,702,000	\$ 9,115,000

The accompanying notes are an integral part of these financial statements.

**ClearSign Combustion Corporation**  
**(a Development Stage Company)**

**Statements of Operations**

	For the Year Ended December 31,		For the Period from Inception (January 23, 2008) to December 31, 2013
	2013	2012	
Co-development revenue	\$ 93,000	\$ -	\$ 93,000
Cost of co-development revenue	88,000	-	88,000
Gross profit	5,000	-	5,000
Operating expenses:			
Research and development	1,851,000	1,184,000	3,559,000
General and administrative	3,450,000	3,026,000	10,446,000
Total operating expenses	5,301,000	4,210,000	14,005,000
Loss from operations	(5,296,000)	(4,210,000)	(14,000,000)
Other income (expense):			
Interest income	11,000	22,000	37,000
Interest expense	-	(1,000)	(1,000)
Total other income (expense)	11,000	21,000	36,000
Net Loss	\$ (5,285,000)	\$ (4,189,000)	\$ (13,964,000)
Net Loss per share - basic and fully diluted	\$ (0.60)	\$ (0.55)	\$ (3.02)
Weighted average number of shares outstanding - basic and fully diluted	8,795,810	7,596,962	4,618,583

The accompanying notes are an integral part of these financial statements.



**ClearSign Combustion Corporation**  
**(a Development Stage Company)**  
**Statement of Stockholders' Equity (Deficit)**

For the period from Inception (January 23, 2008) to December 31, 2013

	Common Stock		Common Stock Class B		Additional Paid-In Capital	Deficit Accumulated in the Development Stage	Total Stockholders' Equity (Deficit)
	Shares	Amount	Shares	Amount			
Shares issued to founders, at no cost	1,065,000	\$ -	476,000	\$ -	\$ 33,000	\$ -	\$ 33,000
Shares issued for services (\$0.02 per share)	125,000	-	-	-	2,000	-	2,000
Shares issued for cash (\$0.02 per share)	-	-	384,000	-	10,000	-	10,000
Shares issued for cash (\$1.80 per share)	467,310	-	-	-	841,000	-	841,000
Shares issued for services (\$1.80 per share)	146,644	-	-	-	264,000	-	264,000
Conversion of shares	1,075,000	-	(860,000)	-	-	-	-
Shares issued for services (\$2.20 per share)	733,523	-	-	-	1,614,000	-	1,614,000
Shares issued for cash (\$2.20 per share)	1,363,364	-	-	-	2,999,000	-	2,999,000
Issuance costs	-	-	-	-	(813,000)	-	(813,000)
Share based payments of warrants	-	-	-	-	112,000	-	112,000
Share based compensation	177,375	-	-	-	302,000	-	302,000
Net loss	-	-	-	-	-	(4,490,000)	(4,490,000)
Balances at December 31, 2011	5,153,216	-	-	-	5,364,000	(4,490,000)	874,000
Shares issued in initial public offering (\$4.00 per share)	3,450,000	1,000	-	-	13,799,000	-	13,800,000

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Issuance costs of initial public offering	-	-	-	-	(2,727,000)	-	(2,727,000)
Share based payments of warrants	-	-	-	-	128,000	-	128,000
Shares issued for services (\$4.00 per share)	18,000	-	-	-	72,000	-	72,000
Shares issued to retire payable (\$4.00 per share)	110,000	-	-	-	440,000	-	440,000
Shares issued for services (\$4.94 per share)	20,799	-	-	-	103,000	-	103,000
Share based compensation	-	-	-	-	135,000	-	135,000
Net loss	-	-	-	-	-	(4,189,000)	(4,189,000)
Balances at December 31, 2012	8,752,015	1,000	-	-	17,314,000	(8,679,000)	8,636,000
Shares issued for services (\$5.00 per share)	30,000	-	-	-	150,000	-	150,000
Shares issued for services (\$9.12 per share)	11,250	-	-	-	102,000	-	102,000
Shares issued upon exercise of warrant (\$2.20 per share)	17,409	-	-	-	39,000	-	39,000
Share based compensation	-	-	-	-	146,000	-	146,000
Net loss	-	-	-	-	-	(5,285,000)	(5,285,000)
Balances at December 31, 2013	8,810,674	\$ 1,000	-	\$ -	\$ 17,751,000	\$ (13,964,000)	\$ 3,788,000

The accompanying notes are an integral part of these financial statements.

**ClearSign Combustion Corporation**  
(a Development Stage Company)

**Statements of Cash Flows**

	For the Year Ended December 31,		For the Period from Inception (January 23, 2008) to December 31, 2013
	2013	2012	
Cash flows from operating activities:			
Net loss	\$ (5,285,000)	\$ (4,189,000)	\$ (13,964,000)
Adjustments to reconcile net loss to net cash used in operating activities:			
Common stock issued or issuable for services	252,000	175,000	1,781,000
Share based payments	146,000	135,000	468,000
Depreciation	209,000	99,000	366,000
Abandonment of capitalized patent	4,000	-	4,000
Deferred rent	(4,000)	17,000	31,000
Change in operating assets and liabilities:			
Prepaid expenses	(58,000)	377,000	(118,000)
Other assets	-	10,000	(10,000)
Accounts payable	21,000	274,000	791,000
Accrued compensation	418,000	(86,000)	701,000
Net cash used in operating activities	(4,297,000)	(3,188,000)	(9,950,000)
Cash flows from investing activities:			
Acquisition of fixed assets	(236,000)	(337,000)	(772,000)
Disbursements for patents and other intangible assets	(845,000)	(531,000)	(1,463,000)
Net cash used in investing activities	(1,081,000)	(868,000)	(2,235,000)
Cash flows from financing activities:			
Proceeds from issuance of common stock for cash, net of offering costs	39,000	11,201,000	14,921,000
Proceeds from issuance of short term promissory note	-	98,000	98,000
Principal payments on promissory notes	-	(146,000)	(146,000)
Net cash provided by financing activities	39,000	11,153,000	14,873,000
Net increase (decrease) in cash and cash equivalents	(5,339,000)	7,097,000	2,688,000
Cash and cash equivalents, beginning of period	8,027,000	930,000	-
Cash and cash equivalents, end of period	\$ 2,688,000	\$ 8,027,000	\$ 2,688,000
Supplemental disclosure of cash flow information:			
Cash paid during the period for interest	\$ -	\$ 1,000	\$ 1,000

**Supplemental disclosure of non-cash investing and financing activities:**

***During the year ended December 31, 2013, the Company:***

- issued 30,000 shares of common stock valued at \$150,000 to directors for services performed in 2013, and
-

issued 11,250 shares of common stock valued at \$102,000 to a consultant for services performed from April to December 2013.

***During the year ended December 31, 2012, the Company:***

- issued warrants to purchase 345,000 shares of common stock valued at \$128,000 as part of an underwriting fee related to the initial public offering,
  - issued 110,000 shares of common stock valued at \$440,000 in partial satisfaction of an account payable,
- issued 20,799 shares of common stock valued at \$103,000 to directors for services performed from April to December 2012, and
  - issued 18,000 shares of common stock valued at \$72,000 to a consultant for services performed in 2012.

***During the period from inception (January 23, 2008) to December 31, 2011, the Company:***

- issued 263,637 shares of common stock valued at \$580,000 and warrants to purchase 136,368 shares of common stock valued at \$64,000 for issuance costs related to a common stock offering,
- issued 454,547 shares of common stock valued at \$1,000,000 to MDB Capital Group LLC for consulting services in 2011,
- issued 52,375 shares of common stock valued at \$115,000 to certain employees to partially satisfy compensation accrued at December 31, 2010,
- issued 68,091 shares of common stock valued at \$126,000 in order to discharge \$99,000 of common stock to be issued at December 31, 2010 and pay rent for the eight months ended August 31, 2011,
- issued 49,728 shares of common stock valued at \$90,000 in order to discharge the common stock to be issued at December 31, 2010,
- canceled 5,825 shares valued at \$10,000 in order to partially discharge common stock to be issued at December 31, 2010,
- made stock grants of 50,000 and 75,000 shares to an employee valued at \$275,000 which is to be earned from July 2011 to September 2016,
- swapped 860,000 shares of Class B common stock held by its founding shareholders for 1,075,000 shares of common stock,
- converted a \$46,000 account payable to a vendor and acquired a fixed asset valued at \$2,000 through a \$48,000 interest-bearing promissory note retired in 2012,
  - issued 3,555 shares of common stock valued at \$8,000 in partial satisfaction of an account payable,
  - issued 10,834 shares of common stock valued at \$20,000 in exchange for equipment, and
  - issued 2,000 shares of common stock valued at \$4,000 to a consultant for services performed in 2011.

The accompanying notes are an integral part of these financial statements.

**ClearSign Combustion Corporation**  
**(a Development Stage Company)**  
**Notes to Financial Statements**

**Note 1 Organization and Description of Business**

ClearSign Combustion Corporation (ClearSign or the Company) is a development stage company located in Seattle, Washington and incorporated in the state of Washington on January 23, 2008. The Company was formed to design, develop and market technologies that improve both the energy efficiency and emission control characteristics of combustion systems. The Company's primary technologies include its Electrodynamic Combustion Control or ECC technology, which introduces a computer-controlled electric field into the combustion region which may better control gas-phase chemical reactions and improve system performance and cost-effectiveness, and its Duplex technology, which achieves very low emissions without the need of external flue gas recirculation, selective catalytic reduction, or higher excess air operation.

As a development stage company, the Company has generated limited revenues from operations to date to meet its operating expenses, and has historically financed its operations primarily through issuances of equity securities. The Company has incurred losses since its inception totaling \$13,964,000 and expects to experience operating losses and negative cash flow for the foreseeable future. Management believes that the successful growth and operation of the Company's business is dependent upon its ability to obtain adequate sources of funding through co-development agreements, strategic partnering agreements, or equity or debt financing to adequately support research and development efforts, protect intellectual property, form relationships with strategic partners, and provide for working capital and general corporate purposes. There can be no assurance that the Company will be successful in achieving its long-term plans as set forth above, or that such plans, if consummated, will enable the Company to obtain profitable operations or continue in the long-term as a going concern.

**Note 2 Summary of Significant Accounting Policies**

Development Stage Enterprise

The Company is a development stage company as defined in Financial Accounting Standards Board (FASB) Accounting Standards Codification (ASC) 915, *Development Stage Entities*. The Company is devoting substantially all of its present efforts to design and develop new technologies in combustion systems and its planned principal operations have not yet commenced. The Company has not generated any significant revenues from operations and has no assurance of any future revenues. All losses accumulated since January 23, 2008 have been considered as part of the Company's development stage activities.

Use of Estimates

The preparation of financial statements in conformity with accounting principles generally accepted in the United States (US GAAP) requires management to make certain estimates and assumptions that affect the reported amounts of assets and liabilities and disclosure of contingent assets and liabilities at the date of the financial statements and the reported amounts of revenues and expenses during the reporting period. Actual results could differ from those estimates.

Revenue Recognition

The Company recognizes revenue on co-development agreements using the percentage of completion method. Under this method, the completion percentage is determined by dividing costs incurred to date by total estimated project costs. Since these projects will require technological development to complete, which by its nature is difficult to

predict, the actual cost required to complete contracted work may vary from estimates. Estimated project costs are revised regularly which can alter the reported level of project profitability. Any estimated project losses are recognized in the current reporting period. Customer billings are recorded when cash receipts are probable and in accordance with the underlying co-development contract. If billings exceed recognized revenue, the difference is recorded as a current liability, while any recognized revenues exceeding billings are recorded as a current asset. Recognized revenues are subject to revisions as the contract progresses to completion and actual revenue and cost become certain. Revisions in revenue estimates are reflected in the period in which the facts that give rise to the revision become known.

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### Cost of Revenue

Cost of co-development revenue includes both direct and allocated indirect costs of completing the scope of work of co-development agreements. Direct costs include labor, materials and other costs incurred directly in fulfilling co-development agreements. Indirect costs include labor, rent, depreciation and other costs associated with operating the Company. Due to the nature of the work involved, the cost of co-development projects may fluctuate substantially from period to period.

### Cash and Cash Equivalents

Highly liquid investments purchased with an original maturity of three months or less are considered cash equivalents. Cash is maintained with a commercial bank where accounts are generally guaranteed by the Federal Deposit Insurance Corporation up to \$250,000. The Company's deposits exceed this limit. The Company has not experienced losses in such accounts and believes it is not exposed to any significant credit risk on cash and cash equivalents.

### Fixed Assets

Fixed assets are recorded at cost. Depreciation is computed using the straight-line method over the estimated lives of the respective assets. Leasehold improvements are depreciated over the life of the lease or their useful life, whichever is shorter. All other fixed assets are depreciated over three to four years. Maintenance and repairs are expensed as incurred.

### Patents and Trademarks

Patents and trademarks are recorded at cost. Amortization is computed using the straight-line method over the estimated useful lives of the assets once they are awarded, which has not yet occurred.

### Impairment of Long-Lived Assets

The Company tests long-lived assets for impairment whenever events or changes in circumstances indicate that the carrying amount of an asset may not be recoverable through the estimated undiscounted cash flows expected to result from the use and eventual disposition of the assets. In that event, a loss is recognized based on the amount by which the carrying amount exceeds the fair value of the long-lived assets. Loss on long-lived assets to be disposed of is determined in a similar manner, except that fair values are reduced for the cost of disposal. During 2013, the Company recorded an impairment loss of \$4,000 from abandonment of a capitalized patent. As of December 31, 2012, the Company determined that there was no impairment.

### Fair Value of Financial Instruments

Fair value is the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date. Assets and liabilities measured at fair value are categorized based on whether or not the inputs are observable in the market and the degree that the inputs are observable. The categorization of financial assets and liabilities within the valuation hierarchy is based upon the lowest level of input that is significant to the fair value measurement.

The Company's financial instruments primarily consist of cash and cash equivalents, accounts payable and accrued expenses. As of the balance sheet dates, the estimated fair values of the financial instruments were not materially different from their carrying values as presented on the balance sheets. This is primarily attributed to the short maturities of these instruments. The Company did not identify any other non-recurring assets and liabilities that are required to be presented in the balance sheets at fair value.

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### Research and Development

The cost of research and development is expensed as incurred. Research and development costs consist of salaries, benefits, share based compensation, consulting fees, rent, utilities, depreciation, and consumables.

### Deferred Rent

Operating lease agreements which contain provisions for future rent increases or periods in which rent payments are reduced or abated are recorded in monthly rent expense in the amount of the total payments over the lease term divided by the number of months of the lease term. The difference between rent expense recorded and the amount paid is credited or charged to deferred rent which is reflected on the accompanying balance sheet.

### Income Taxes

The Company accounts for income taxes using an asset and liability approach which allows for the recognition and measurement of deferred tax assets based upon the likelihood of realization of tax benefits in future years. Under the asset and liability approach, deferred taxes are provided for the net tax effects of temporary differences between the carrying amounts of assets and liabilities for financial reporting purposes and the amounts used for income tax purposes. A valuation allowance is provided for deferred tax assets if it is more likely than not these items will either expire before the Company is able to realize their benefits, or that future deductibility is uncertain.

Tax benefits from an uncertain tax position are recognized only if it is more likely than not that the tax position will be sustained on examination by the taxing authorities based on the technical merits of the position. The tax benefits recognized in the financial statements from such a position are measured based on the largest benefit that has a greater than 50 percent likelihood of being realized upon ultimate resolution.

### Stock-Based Compensation

The costs of all employee stock options, as well as other equity-based compensation arrangements, are reflected in the financial statements based on the estimated fair value of the awards on the grant date. That cost is recognized over the period during which an employee is required to provide service in exchange for the award. Stock compensation for stock granted to non-employees is determined as the fair value of the consideration received or the fair value of equity instruments issued, whichever is more reliably measured.

### Net Loss per Common Share

Basic loss per share is computed by dividing loss available to common stockholders by the weighted-average number of common shares outstanding. Diluted loss per share is computed similar to basic loss per share except that the denominator is increased to include additional common shares available upon exercise of stock options and warrants using the treasury stock method, except for periods for which no common share equivalents are included because their effect would be anti-dilutive. Potentially dilutive shares outstanding amounted to 1,109,724 and 920,743 at December 31, 2013 and 2012, respectively.

### Recently Issued Accounting Pronouncements

Management does not believe that any recently issued, but not yet effective standards, if adopted, will have a material effect on the financial statements.

### Emerging Growth Company

The Company is an emerging growth company as defined under the Jumpstart Our Business Startups Act of 2012 (JOBS Act). An emerging growth company may delay the adoption of certain accounting standards until those standards would otherwise apply to private companies. The Company will remain an emerging growth company until December 31, 2017, although it will lose that status sooner if its revenues exceed \$1 billion, if it issues more than \$1 billion in non-convertible debt in a three year period, or if the market value of its common stock that is held by non-affiliates exceeds \$700 million as of any June 30. At June 30, 2013, the market value of the Company's common stock that is held by non-affiliates totaled \$60 million.

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**Note 3 Fixed Assets**

Fixed assets are summarized as follows:

	December 31, 2013	2012
Machinery and equipment	\$ 633,000	\$ 444,000
Office furniture and equipment	95,000	71,000
Leasehold improvements	62,000	29,000
Accumulated depreciation	(366,000)	(157,000)
	424,000	387,000
Construction in progress	3,000	13,000
	\$ 427,000	\$ 400,000

**Note 4 Promissory Notes**

In December 2011, the Company executed a \$48,000 promissory note with a vendor to extend the terms of an account payable. The fully amortizing unsecured note bore interest at 8% per annum and was payable in equal monthly payments of \$4,000 through its maturity in November 2012. The Company paid the note in full without penalty in May 2012.

In April 2012, the Company executed a \$98,000 promissory note to finance certain insurance coverage. The fully amortizing unsecured note bore interest at 3.39% per annum and was payable in equal monthly payments of \$11,000 through its maturity in January 2013. The Company paid the note in full without penalty in May 2012.

**Note 5 Income Taxes**

Through December 31, 2013, the Company incurred net operating losses for federal tax purposes of approximately \$14,100,000. The net operating loss carry forward may be used to reduce taxable income through the years 2028 to 2033. The availability of the Company's net operating loss carry forward is subject to limitation if there is a 50% or more change in the ownership of the Company's stock.

A reconciliation of the expected tax computed at the statutory federal income tax rate to the provision for income taxes is as follows:

	2013	2012
Expected tax benefit at 34%	\$ (1,797,000)	\$ (1,424,000)
Change in valuation allowance	1,720,000	1,675,000
Other	77,000	(251,000)
Provision for income taxes	\$ -	\$ -

The net deferred tax asset at December 31, 2013 and 2012 was \$4,795,000 and \$3,075,000, respectively. A 100% valuation allowance has been established against the deferred tax assets as the utilization of the loss carry forward cannot reasonably be assured. Significant components of the deferred tax assets (liabilities), computed at the statutory federal tax rate of 34%, are approximately as follows:

	2013	2012
Net operating loss carry forwards	\$ 4,800,000	\$ 3,020,000
Accrued liabilities	(25,000)	(20,000)
Stock compensation	(65,000)	(15,000)
Depreciation	75,000	80,000
Prepaid expenses	20,000	20,000
Deferred rent	(10,000)	(10,000)
Deferred tax assets, net	4,795,000	3,075,000
Valuation allowance	(4,795,000)	(3,075,000)
Net deferred tax asset	\$ -	\$ -

Although the Company is not under examination, the tax years for 2008 and forward are subject to examination by United States tax authorities. The Company's practice is to recognize interest and penalties related to income tax matters in income tax expense. As of December 31, 2013 and 2012, there was no accrued interest or penalties related to uncertain tax positions.

## **Note 6 Stockholders' Equity**

### Common Stock and Preferred Stock

The Company is authorized to issue 62,500,000 shares of common stock and 2,000,000 shares of preferred stock. Preferences, limitations, voting powers and relative rights of any preferred stock to be issued may be determined by the Company's Board of Directors. The Company has not issued any shares of preferred stock.

In April and May 2012, the Company completed an initial public offering (IPO) whereby 3,450,000 shares of common stock were issued at \$4.00 per share, which included the exercise of the overallotment allowance by the underwriter, MDB Capital Group, LLC (MDB). Gross proceeds from the IPO totaled \$13.8 million and net cash proceeds approximated \$11.2 million. Expenses of the offering approximated \$2.7 million, including underwriter fees of \$1.2 million paid to MDB along with a warrant to purchase 345,000 shares of ClearSign's common stock at \$5.00 per share exercisable from April 2013 to April 2017 valued at \$128,000, qualified independent underwriter fees of \$110,000, underwriter legal fees of \$125,000, underwriter expenses of \$35,000, and issuer legal fees of \$822,000, which was paid in part through the issuance of 110,000 shares of the Company's common stock to its legal counsel at a price of \$4.00 per share.

As described in Note 10, the Company completed a \$6.5 million registered direct offering of common stock in March 2014.

Equity Incentive Plan

The Company has an Equity Incentive Plan which provides for the granting of options to purchase shares of common stock, stock awards to purchase shares at no less than 85% of the value of the shares, and stock bonuses to officers, employees, board members, certain consultants, and advisors. The Compensation Committee of the Board of Directors is authorized to administer the Equity Incentive Plan and establish the grant terms, including the grant price, vesting period and exercise date. As of December 31, 2013, the number of shares reserved for issuance under the Equity Incentive Plan totaled 991,300 shares. The Equity Incentive Plan provides for quarterly increases in the available number of authorized shares equal to the lesser of 10% of any new shares issued by the Company during the quarter immediately prior to the adjustment date or such lesser amount as the Board of Directors shall determine. Activity under the Equity Incentive Plan is as follows:

	2013	2012
Reserved but unissued shares under the Equity Incentive Plan, beginning of year	480,260	140,625
Increases in the number of authorized shares under the Equity Incentive Plan	5,866	360,434
Grants of stock options	(206,390)	-
Stock option forfeitures	-	-
Stock grants	(30,000)	(83,299)
Stock grant forfeitures	-	62,500
Reserved but unissued shares under the Equity Incentive Plan, end of year	249,736	480,260

Stock Options

In 2013, the Company granted to certain employees 203,990 and 2,400 stock options at an exercise prices of \$4.88 per share and \$7.33 per share, respectively, under the Equity Incentive Plan. The stock options were issued at the grant date fair value for a contractual life of 10 years and vest over four years. As permitted by SAB 107, due to the Company's insufficient history of option activity, management utilized the simplified approach to estimate the options' expected term, which represents the period of time that options granted are expected to be outstanding. Expected volatility was determined through the average of a peer group of public companies. The Company estimated the forfeiture rate at the time of grant and will revise it, if necessary, in subsequent periods if actual forfeitures differ from those estimates. The Company recognizes compensation costs only for those equity awards expected to vest. The risk-free rate for periods within the contractual life of the option is based on the U.S. Treasury yield in effect at the time of grant. The Company has never declared or paid dividends and has no plans to do so in the foreseeable future. The Company did not grant stock options in 2012.

The following weighted-average assumptions were utilized in the calculation of the fair value of the stock options:

Expected life	6.25 years	
Weighted average volatility	33	%
Forfeiture rate	13	%
Weighted average risk-free interest rate	1.31	%
Expected dividend rate	-	

The fair value of stock options granted estimated on the date of grant using the Black-Scholes option valuation model was \$307,000. The recognized compensation expense associated with these grants in 2013 was \$76,000.

A summary of the Company's stock option activity and related information is as follows:

	2013			2012		
	Common Stock	Weighted Average Exercise Price	Weighted Average Remaining Contractual Life (in years)	Common Stock	Weighted Average Exercise Price	Weighted Average Remaining Contractual Life (in years)
Outstanding at January 1	359,375	\$ 2.20	8.75	359,375	\$ 2.20	9.75
Granted	206,390	\$ 4.91	9.01	-	-	-
Exercised	-	-	-	-	-	-
Forfeited/Expired/Exchanged	-	-	-	-	-	-
Outstanding at December 31	565,765	\$ 3.19	8.21	359,375	\$ 2.20	8.75
Exercisable at December 31	317,354	\$ 2.44	7.87	242,188	\$ 2.20	8.75

A summary of the status of the Company's non-vested stock options at December 31 and changes during the year is as follows:

	2013		2012	
	Number of Options	Weighted Average Grant Date Fair Value	Number of Options	Weighted Average Grant Date Fair Value
Non-vested stock options at January 1	117,188	\$ 2.20	234,375	\$ 2.20
Granted	206,390	\$ 4.91	-	-
Vested	(75,167)	\$ 3.21	(117,188)	\$ 2.20
Exercised	-	-	-	-
Forfeited/Expired/Exchanged	-	-	-	-
Non-vested stock options at December 31	248,411	\$ 4.15	117,188	\$ 2.20

At December 31, 2013, there was \$290,000 of total unrecognized compensation cost related to non-vested stock option-based compensation arrangements granted under the Equity Incentive Plan. That cost is expected to be recognized in future years as follows:

2014	\$ 116,000
2015	97,000
2016	76,000
2017	1,000
	\$ 290,000

The recognized compensation cost is as follows:

2013	2012	For the Period from Inception (January 23, 2008) to December 31, 2013

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Research and development	\$	42,000	\$	16,000	\$	66,000
General and administrative		73,000		23,000		199,000
Effect on net loss	\$	115,000	\$	39,000	\$	265,000
Effect on net loss per share	\$	0.01	\$	0.01	\$	0.06

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Stock Grants

In 2013 and 2012, the Company granted 30,000 and 20,799 shares, respectively, of common stock under the Equity Incentive Plan to its three independent directors in accordance with agreements for service on the board. The fair value of the stock at the time of grant was \$5.00 and \$4.94 per share for a total value of \$150,000 and \$103,000 which the Company recognized in general and administrative expense in 2013 and 2012, respectively.

In 2011, the Company granted 125,000 shares of stock under the Equity Incentive Plan to a key employee which are subject to declining repurchase rights by the Company at \$0.0001 per share should the employee terminate employment or upon other related circumstances prior to June 30, 2015. The fair value of the stock at the time of grant was \$2.20 per share for a total value of \$275,000. After the repurchase rights had expired on 62,500 shares, the Company terminated the remaining stock grant agreement in December 2012 and issued a new stock grant for 62,500 shares of which 2,500 shares were vested immediately. The new stock grant is subject to declining repurchase rights by the Company on 60,000 shares at \$0.0001 per share should the employee terminate employment or upon other related circumstances prior to September 30, 2016. The Company recognized general and administrative compensation expense of \$31,000 and \$96,000 in 2013 and 2012, respectively, and \$202,000 for the period from inception (January 23, 2008) to December 31, 2013. The remaining cost is reflected as a contra-equity balance against additional paid in capital and is expected to be recognized in future years as follows:

2014	\$ 27,000
2015	26,000
2016	20,000
	\$ 73,000

Consultant Stock Plan

On May 2, 2013, the shareholders approved the 2013 Consultant Stock Plan (the Consultant Plan) which provides for the granting of shares of common stock to consultants who provide services related to capital raising, investor relations, and making a market in or promoting the Company's securities. The Company's officers, employees, and board members are not entitled to receive grants from the Consultant Plan. The Compensation Committee of the Board of Directors is authorized to administer the Consultant Plan and establish the grant terms. The number of shares reserved for issuance under the Consultant Plan on the date of adoption of May 2, 2013 totaled 75,000 shares. The Consultant Plan provides for quarterly increases in the available number of authorized shares equal to the lesser of 1% of any new shares issued by the Company during the quarter immediately prior to the adjustment date or such lesser amount as the Board of Directors shall determine. The Company granted 11,250 shares from the Consultant Plan to a consultant for 2013 services. The fair value of the stock at the time of grant was \$9.12 per share for a total value of \$102,000 which the Company recognized in general and administrative expense in 2013. Activity under the Consultant Plan in 2013 is as follows:

Reserved but unissued shares under the Consultant Plan at May 2, 2013	75,000
Increases in the number of authorized shares under the Plan	287
Stock grants	(11,250)
Stock grant forfeitures	-
Reserved but unissued shares under the Consultant Plan at December 31, 2013	64,037



Warrants

In conjunction with the IPO in 2012, the Company granted warrants to MDB to purchase 345,000 common stock shares at \$5.00 per share exercisable from April 2013 to April 2017. The fair value of the warrants was estimated to be \$128,000 on the date of the grant using the Black-Scholes option-pricing model. Expected volatility was determined through the average of a peer group of public companies. The risk-free rate for periods within the contractual life of the warrants is based on the U.S. Treasury yield in effect at the time of grant. The Company has never declared or paid dividends and has no plans to do so in the foreseeable future. The following weighted-average assumptions were utilized for the calculations:

Expected life (in years)	2.5	
Weighted average volatility	27	%
Weighted average risk-free interest rate	0.33	%
Expected dividend rate	-	

In 2013, a warrant to purchase 17,409 shares of common stock at \$2.20 per share was exercised whereby the Company received \$39,000 in proceeds. A summary of the Company's warrant activity and related information is as follows:

	2013		2012	
	Warrants	Weighted Average Exercise Price	Warrants	Weighted Average Exercise Price
Outstanding at beginning of year	561,368	\$ 3.86	216,368	\$ 3.25
Granted	-	-	345,000	\$ 5.00
Exercised	(17,409)	\$ 2.20	-	-
Forfeited/Expired	-	-	-	-
Outstanding at end of year	543,959	\$ 3.92	561,368	\$ 3.86

The following table summarizes the number of warrants, the weighted average exercise price, and weighted average life (in years) by price for both total outstanding warrants and total exercisable warrants at December 31, 2013:

Exercise Price	Total Outstanding Warrants		
	Warrants	Weighted Average Exercise Price	Life (in years)
\$ 1.80	80,000	\$ 1.80	7.13
\$ 2.20	118,959	\$ 2.20	2.36
\$ 5.00	345,000	\$ 5.00	3.32
	543,959	\$ 3.92	

**Note 7 Retirement Plan**

In May 2012, the Company adopted a defined contribution retirement plan covering all of its employees. Under the plan, the Company matches employee contributions up to 3% of each employee's 2013 earnings and 2% of each employee's 2012 earnings. The Company's matching contribution expense totaled \$38,000, \$24,000, and \$62,000 in 2013, 2012, and for the period from inception (January 23, 2008) to December 31, 2013, respectively.

**Note 8 Related Party Transactions**

In 2013 and 2012 and for the period from inception (January 23, 2008) to December 31, 2013, the Company paid consulting fees of \$103,000, \$145,000 and \$365,000, respectively, to the Alternative Energy Resource Alliance, a

non-profit organization whose executive director is David Goodson. In exchange, Mr. Goodson provided scientific consulting services to the Company. Mr. Goodson is a director and co-founder of the Company and, through an irrevocable trust, a significant beneficial owner of the Company's common stock at December 31, 2013.

MDB was paid \$4,000 and \$76,000 for patent work and related expenses in 2013 and 2012, respectively. In 2012, MDB provided underwriting services for which it received fees of \$1.2 million along with a warrant to purchase 345,000 shares of ClearSign's common stock at \$5.00 per share exercisable through April 2017 valued at \$128,000. In 2011, MDB provided placement agent services for which it received fees of \$300,000, which it elected to receive in the form of 136,364 common stock shares valued at \$2.20 per share, along with a warrant to purchase 136,368 shares of ClearSign's common stock at \$2.20 per share exercisable through May 2016 valued at \$64,000. In addition, MDB provided consulting services to the Company in 2011 where it earned a fee of \$1 million which MDB elected to receive in the form of 454,547 common stock shares valued at \$2.20 per share. For the period from inception (January 23, 2008) to December 31, 2013, MDB received a total of \$1,280,000, 590,911 shares of common stock valued at \$1,300,000, and warrants to purchase 481,368 shares of ClearSign's common stock at a weighted average price of \$4.21 per share exercisable through April 2017 and valued at \$192,000. MDB and its chief executive officer constitute a significant beneficial owner of the Company's common stock at December 31, 2013.

**Note 9 Commitments and Contingencies**

The Company has a triple net lease for office and laboratory space for the period November 2011 to February 2017. Under the terms of the lease, the Company paid no rent for the period November 2011 to February 2012. Rent payments commenced in March 2012 and escalate annually by 3%. The Company records monthly rent expense equal to the total of the payments over the lease term divided by the number of months of the lease term. Therefore, rent expense of \$17,000 was accrued in 2012. In 2013, the deferred rent was reduced by \$4,000. Under the terms of the lease, the Company will also pay monthly triple net operating costs which currently approximate \$2,000 per month. Minimum future payments under this lease at December 31, 2013 are as follows:

2014	\$ 120,000
2015	137,000
2016	141,000
2017	24,000
	\$ 422,000

For the years ended December 31, 2013 and 2012, and for the period from inception (January 23, 2008) to December 31, 2013, rent expense amounted to \$135,000, \$137,000, and \$428,000, respectively.

The Company and its Chief Executive Officer, Richard F. Rutkowski, are parties to an employment agreement (the Agreement) which terminates on January 1, 2017, unless earlier terminated. Compensation under the Agreement includes an annual salary of \$355,000 and \$350,000 in 2013 and 2012, respectively, with annual cost-of-living adjustments, annual cash and equity bonuses based on performance standards established by the Compensation Committee of the Board of Directors, medical and dental benefits for Mr. Rutkowski and his family, disability insurance, and term life insurance for the benefit of his dependents. The Agreement may be terminated by the Company without cause under certain circumstances, as defined in the Agreement whereby a severance payment would be due in the amount of compensation that would have been due had employment not been terminated or one year of the current annual compensation, whichever is greater.

The Company has agreements with its three independent directors to compensate them annually after the Company's common stock commenced trading publicly. The obligation totals \$300,000 per year of which \$150,000 is to be paid with the Company's common stock at fair value. Directors are elected for annual terms which expire in May 2014.

The Company's former legal advisors, Perkins Coie LLP, contacted management in March 2012 that they believe TWB Investment Partnership II, L.P., a party related to Perkins Coie LLP, has the right to acquire 25,250 shares of the Company's common stock at \$0.02 per share pursuant to an engagement letter dated December 4, 2007. The claim was denied since, among other defenses, management believes it entered into a full settlement of all amounts owed to Perkins Coie LLP in November 2011. There has been no further communication with Perkins Coie LLP regarding the matter since March 2012.

**Note 10 Subsequent Events**

In March 2014, the Company completed a registered direct offering of common stock whereby 812,500 shares were issued at \$8.00 per share. Gross proceeds from the offering totaled \$6.5 million and net cash proceeds approximated \$5.7 million. Expenses of the offering approximated \$0.8 million, including placement agent fees of \$0.5 million along with a warrant to purchase 20,313 shares of ClearSign's common stock at \$10.00 per share exercisable until March 2019, placement agent legal fees of \$75,000, and other costs of \$175,000.

In February 2014, the Company granted 14,625 shares of common stock under the Equity Incentive Plan to its three independent directors in accordance with board agreements for service in 2014. The Company also granted 7,000 shares of common stock under the Consultant Stock Plan to a consultant for service in 2014. The fair value of the stock at the time of grant was \$10.26 per share for a total value of \$222,000 which the Company will recognize in general and administrative expense on a pro-rated quarterly basis in 2014.

In February 2014, the Company granted 122,880 stock options under the Equity Incentive Plan to certain employees. The stock options have an exercise price of \$9.90 per share, the grant date fair value, and a contractual life of 10 years. The fair value of stock options granted in February 2014 estimated on the date of grant using the Black-Scholes option valuation model was \$369,000.

After taking into effect the February 2014 stock option grant, the total unrecognized compensation cost related to non-vested stock option-based compensation arrangements granted under the Equity Incentive Plan that is expected to be recognized in future years as follows:

2014	\$ 208,000
2015	189,000
2016	169,000
2017	93,000
	\$ 659,000

Activity under the Equity Incentive Plan through February 2014 is as follows:

Reserved but unissued shares under the Equity Incentive Plan, January 1, 2014	249,736
Increases in the number of authorized shares under the Equity Incentive Plan	1,818
Grants of stock options	(122,880)
Stock grants	(14,625)
Reserved but unissued shares under the Equity Incentive Plan, February 28, 2014	114,049

## **ITEM 9: CHANGES IN AND DISAGREEMENTS WITH ACCOUNTANTS ON ACCOUNTING AND FINANCIAL DISCLOSURE**

Not applicable.

## **ITEM 9A: CONTROLS AND PROCEDURES**

Disclosure controls and procedures include, without limitation, controls and procedures designed to ensure that information required to be disclosed by an issuer in the reports that it files or submits under the Securities Exchange Act of 1934, as amended (the "Act") is accumulated and communicated to the issuer's management, including its principal executive and principal financial officers, or persons performing similar functions, as appropriate to allow timely decisions regarding required disclosure.

### **Report on Controls and Procedures**

We carried out an evaluation, under the supervision and with the participation of our management, including our chief executive officer (our principal executive officer) and our chief financial officer (our principal financial and accounting officer), of the effectiveness of the design and operation of our disclosure controls and procedures as of the end of the period covered by this report. The evaluation was undertaken in consultation with our accounting personnel. Based on that evaluation, our chief executive officer and our chief financial officer concluded that our disclosure controls and procedures are effective to ensure that information required to be disclosed by us in the reports that we file or submit under the Securities Exchange Act of 1934 is recorded, processed, summarized and reported within the time periods specified in the Securities and Exchange Commission's rules and forms.

### **Report on Internal Control over Financial Reporting**

Our chief executive officer and our chief financial officer are responsible for establishing and maintaining internal control over financial reporting. Internal control over financial reporting is defined in Rule 13a-15(f) and 15d-15(f) promulgated under the Securities Exchange Act of 1934 as a process designed by, or under the supervision of, our principal executive and principal financial officers and effected by our board of directors, management and other personnel, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles and includes those policies and procedures that:

- pertain to the maintenance of records that in reasonable detail accurately and fairly reflect the transactions and dispositions of our assets;
- provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with generally accepted accounting principles, and that our receipts and expenditures are being made only in accordance with authorizations of management and our directors; and
- provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use or disposition of our assets that could have a material effect on the financial statements.

Because of its inherent limitations, our internal control over financial reporting may not prevent or detect misstatements. Therefore, even those systems determined to be effective can provide only reasonable assurance with respect to financial statement preparation and presentation. Projections of any evaluation of effectiveness to future periods are subject to the risk that controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate.

Our chief executive officer and our chief financial officer assessed the effectiveness of our internal control over financial reporting as of December 31 2013. In making this assessment, management used the criteria set forth by the

Committee of Sponsoring Organizations of the Treadway Commission (COSO) in *Internal Control Integrated Framework*.

Based on our assessment, our chief executive officer and our chief financial officer determined that, as of December 31, 2013, our internal control over financial reporting is effective.

### **Changes in Internal Control over Financial Reporting**

There have been no changes in our internal control over financial reporting (as such term is defined in Rules 13a-15(f) and 15d-15 (f) under the Exchange Act) during the fourth quarter of the last fiscal year that have materially affected, or are reasonably likely to materially affect, our internal control over financial reporting.

### **ITEM 9B: OTHER INFORMATION**

The employment agreement with our Chief Executive Officer, Richard F. Rutkowski, was amended on March 10, 2014 to extend the term of the agreement from January 1, 2015 to January 1, 2017, unless earlier terminated in accordance with the agreement.

### **PART III**

#### **Item 10: Directors, Executive Officers and corporate governance**

The information concerning the Company's Code of Business Conduct and Ethics is set forth below in this Item 10. All other information required by this item is incorporated by reference to the Company's Proxy Statement for the 2014 Annual Meeting of Shareholders.

#### **Code of Business Conduct and Ethics**

The Board of Directors has adopted a code of business conduct and ethics (the Code) designed, in part, to deter wrongdoing and to promote honest and ethical conduct, including the ethical handling of actual or apparent conflicts of interest between personal and professional relationships, full, fair, accurate, timely and understandable disclosure in reports and documents that the Company files with or submits to the Securities and Exchange Commission and in the Company's other public communications, compliance with applicable governmental laws, rules and regulations, the prompt internal reporting of Code violations to an appropriate person or persons, as identified in the Code and accountability for adherence to the Code. The Code applies to all directors, executive officers and employees of the Company. The Code may be found on the Company's website at [www.clearsign.com](http://www.clearsign.com).

The Company intends to disclose any amendments to or waivers of its code of ethics as it applies to directors or executive officers by filing them on Form 8-K.

#### **Item 11: Executive Compensation**

The information required by this item is incorporated by reference to the Company's Proxy Statement for the 2014 Annual Meeting of Shareholders.

#### **Item 12: Security Ownership of Certain Beneficial Owners and Management AND RELATED SHAREHOLDER MATTERS**

The information concerning the Company's equity compensation plan is set forth below in this Item 12. All other information required by this item is incorporated by reference to the Company's Proxy Statement for the 2014 Annual Meeting of Shareholders.

**Equity Compensation Plan Information**

The table below provides information as of December 31, 2013 regarding the compensation plans (2011 Equity Incentive Plan and 2013 Consultant Stock Plan) under which equity securities of ClearSign are authorized for issuance.

Plan category	Number of securities to be issued upon exercise of outstanding options, warrants and rights (a)	Weighted-average exercise price of outstanding options and rights (b)	Number of securities remaining available for future issuance under equity compensation plans (excluding securities reflected in column (a)) (c)
Equity compensation plans approved by security holders	645,765	\$ 3.02	249,736
Equity compensation plans not approved by security holders	-	-	-
	645,765		249,736

The above schedule excludes stock grants of 175,799 and 11,250 shares under the 2011 Equity Incentive Plan and the 2013 Consultant Stock Plan, respectively, each of which was approved by the security holders.

**Item 13: Certain Relationships and Related Transactions, AND DIRECTOR INDEPENDENCE**

The information required by this item is incorporated by reference to the Company's Proxy Statement for the 2014 Annual Meeting of Shareholders.

**ITEM 14: PRINCIPAL ACCOUNTANT FEES AND SERVICES**

The information required by this item is incorporated by reference to the Company's Proxy Statement for the 2014 Annual Meeting of Shareholders.

**PART IV****Item 15. Exhibits AND Financial Statement Schedules****15(a) (1) Financial Statements**

The financial statements filed as part of this report are listed and indexed in the table of contents. Financial statement schedules have been omitted because they are not applicable or the required information has been included elsewhere in this report.

**15(a) (2) Financial Statement Schedules**

Not applicable.



15 (a) (3) **Exhibits**

The exhibits filed as part of this Annual Report on Form 10-K are listed in the Exhibit Index immediately preceding the exhibits. The Company has identified in the Exhibit Index each management contract and compensation plan filed as an exhibit to this Annual Report on Form 10-K in response to Item 15(a) (3) of Form 10-K.

**Exhibit**

<b>No.</b>	<b>Description of Document</b>
3.1	Articles of Incorporation of ClearSign Combustion Corporation, amended on February 2, 2011 (1)
3.1.1	Articles of Amendment to Articles of Incorporation of ClearSign Combustion Corporation filed on December 22, 2011 (1)
3.2	Bylaws of ClearSign Combustion Corporation (1)
4.1	Form of Common Stock Certificate (1)
4.2	Underwriter's Warrant (1)
4.3	Form of Common Stock Purchase Warrant issued on February 16, 2011 to various consultants (1)
10.3.1	Form of Lock-Up Agreement (1)
10.3.2	Form of Lock-Up Agreement executed by MDB Capital Group, LLC (1)
10.3.3	Form of Lock-Up Agreement executed by Integrated Surgical Systems, Inc. (1)
10.5	Office Lease Agreement (1)
10.6	Form of Employee Intellectual Property Assignment and Nondisclosure Agreement (1)
10.7	ClearSign Combustion Corporation 2011 Equity Incentive Plan (1)
10.18	Form of Director and Officer Indemnification Agreement (1)+
10.21	Employment Agreement dated December 27, 2011 between the registrant and Richard Rutkowski (1)+
10.22	Amended and Restated Consulting Agreement dated December 22, 2011 between the registrant and John McFarland (1)
10.23	ClearSign Combustion Corporation 2013 Consultant Stock Plan (2)
10.24	Amendment dated March 10, 2014 to Employment Agreement between the registrant and Richard F. Rutkowski*+
10.25	Placement Agency Agreement dated February 27, 2014 between the registrant and Brean Capital, LLC (3)
10.26	Form of Subscription Agreement dated March 5, 2014 (3)
10.27	Warrant issued to Brean Capital LLC dated March 5, 2014*
10.28	Form of Lock-Up Agreement dated March 5, 2014*
10.29	First Amendment to Office Lease Agreement dated December 17, 2013*
23.1	Consent of Gumbiner Savett Inc., Independent Registered Public Accounting Firm*
101	The following financial statements from the registrant's Annual Report on Form 10-K for 2013, formatted in XBRL: (i) Balance Sheets; (ii) Statements of Operations; (iii) Statement of Stockholders' Equity; (iv) Statements of Cash Flows; (v) Notes to Financial Statements.*

\*Filed herewith.

+Agreement with management.

(1) Incorporated by reference from the registrant's registration statement on Form S-1, as amended, file number 333-177946, originally filed with the Securities and Exchange Commission on November 14, 2011.

- (2) Incorporated by reference from the registrant's Quarterly Report on Form 10-Q for the quarter ended March 31, 2013, filed with the Securities and Exchange Commission on May 6, 2013.
- (3) Incorporated by reference from the registrant's Current Report on Form 8-K filed with the Securities and Exchange Commission on February 28, 2014.

**SIGNATURES**

Pursuant to the requirements of Section 13 or 15(d) of the Securities Exchange Act of 1934, the registrant has duly caused this report to be signed on its behalf by the undersigned, thereunto duly authorized, in the City of Seattle, State of Washington, on this 11th day of March, 2014.

**CLEARSIGN COMBUSTION CORPORATION**

By: /s/ Richard F. Rutkowski  
Richard F. Rutkowski  
Chief Executive Officer

By: /s/ James N. Harmon  
James N. Harmon  
Chief Financial Officer

Pursuant to the requirements of the Securities Exchange Act of 1934, this report has been signed below by the following persons on behalf of the registrant and in the capacities and on the dates indicated.

Dated: March 11, 2014 /s/ Richard F. Rutkowski  
Richard F. Rutkowski  
Chief Executive Officer and  
Director  
(Principal Executive Officer)

Dated: March 11, 2014 /s/ James N. Harmon  
James N. Harmon  
Chief Financial Officer  
(Principal Financial and  
Accounting Officer)

Dated: March 11, 2014 /s/ David B. Goodson  
David B. Goodson, Director

Dated: March 11, 2014 /s/ Stephen E. Pirnat  
Stephen E. Pirnat, Director

Dated: March 11, 2014 /s/ Scott P. Isaacson  
Scott P. Isaacson, Director

Dated: March 11, 2014 /s/ Lon E. Bell  
Lon E. Bell, Ph.D., Director

