

CLEARSIGN COMBUSTION CORP  
Form 10-K  
February 26, 2015

**UNITED STATES**

**SECURITIES AND EXCHANGE COMMISSION**

**Washington, D.C. 20549**

**FORM 10-K**

**(Mark One)**

**ANNUAL REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934**

**For the fiscal year ended December 31, 2014**

**OR**

**TRANSITION REPORT PURSUANT TO 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**

**26-2056298**

(State or other jurisdiction of incorporation or organization) (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 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

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, 2014, 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 \$70,900,000.

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

As of February 26, 2015, the registrant has 12,671,476 shares of common stock, par value \$.0001, issued and outstanding.

**DOCUMENTS INCORPORATED BY REFERENCE**

Portions of the registrant's Proxy Statement for the 2015 Annual Meeting of Stockholders are incorporated herein by reference in Part III of this Annual Report on Form 10-K to the extent stated herein. Such proxy statement will be filed with the Securities and Exchange Commission within 120 days of the registrant's fiscal year ended December 31, 2014.

**Combustion Corporation**

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

This Annual Report on Form 10-K 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,” “other similar expressions in this report. In particular, these include statements relating to future actions; prospective products, applications, customers and technologies; future performance or results of anticipated products; anticipated expenses; and future 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 materially from those discussed in the forward-looking statements include, but are not limited to:

- our limited cash and our history of losses;
- the successful development of our products;
- the acceptance of our products in our markets;
- 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 design;

- 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.

Forward-looking statements may appear throughout this report, including without limitation, the following sections: Item 1 “Business,” Item 1A “Risk Factors,” and Item 7 “Management’s Discussion and Analysis of Financial Condition and Results of Operations.” 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.



## **PART I**

### **ITEM 1: BUSINESS**

#### **Introduction**

We design, develop and market technologies for the purpose of improving key performance characteristics of combustion systems, including emission and operational performance, energy efficiency and overall cost-effectiveness. Our patent-pending Duplex™ and Electrodynamic Combustion Control™ (ECC™) platform technologies enhance the performance of combustion systems in a broad range of markets, including the refinery, petrochemical, chemical, power and commercial boiler industries. Our Duplex technology uses a porous ceramic tile above a standard burner to significantly reduce flame length and achieve very low emissions without the need for external flue gas recirculation, selective catalytic reduction, or excess air systems. Our ECC technology introduces a computer-controlled high voltage electric field into a combustion volume in order to better control gas-phase chemical reactions and improve system performance and cost-effectiveness. To date, our operations have been funded primarily through sales of our common stock. We have earned no significant revenue since inception in 2008.

While we have not yet commercialized our Duplex or ECC technologies and our technologies have not been tested or verified by any independent third party, we believe that our proprietary technology platforms may improve emissions control performance and operational performance for many types of industrial and commercial combustion systems. As a result, we also believe that our technologies may reduce 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.

Based on the results of our testing, we believe our technologies compare favorably with current industry-standard air pollution control technologies, such as selective catalytic reduction devices, low- and ultra-low NOx burners (which address nitrogen oxides or NOx), excess air systems and other similar technologies. Such systems are used in our current target market segments of petroleum refining and petrochemical process heaters, package and utility boilers and large-scale once through steam generators (OTSGs).

#### **Corporate History**

We were incorporated in Washington on January 23, 2008. 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. The Energy Information Administration of the U.S. Department of Energy determined in its 2014 Annual Energy Outlook that the world's industrial sector consumed 165 quadrillion British thermal units (BTUs) of hydrocarbon fuels. These are used to provide heat for all manner of industrial processes, including boilers, furnaces, kilns and turbines. 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. Although the potential markets for our technologies are vast, our current target market segments for introduction of our technologies involve petroleum refining and petrochemical process heaters, package boilers, and OTSGs.

## **Our Technologies**

### *Field Testing of our Duplex Technology*

After performing testing on our Duplex technology in our laboratory furnace with thermal output up to 5 million BTUs per hour (BTU/hr), we commenced field development work in the fourth quarter of 2014.

Our first field project is with Southern California-based Aera Energy LLC (Aera Energy) to demonstrate and test the Duplex technology in an OTSG with a thermal output ranging from 40 to 62.5 million BTU/hr used to facilitate the production of heavy oil through enhanced oil recovery in California's San Joaquin Valley. Under the terms of our agreement with Aera Energy, we retrofitted an OTSG unit to attempt to achieve a range of performance criteria. To date, we have fired an OTSG located in Aera Energy's Belridge field outside Bakersfield, California at a rate of 42.5 million BTU/hr and met the San Joaquin Valley Air Pollution Control District's regulations under Rule 4320 requiring NOx emissions of 5 ppm (corrected at 3% O<sub>2</sub>). These results were achieved without major modifications to the burner or the need for flue gas recirculation (FGR). During testing, Aera's OTSG unit continued to supply steam at the capacity and quality required for oil field operations. We continue to conduct testing to address additional performance criteria in order to continue to validate the environmental and operational benefits of our Duplex technology.

In December 2014, we executed agreements regarding two further field tests with prospective customers at two separate petroleum refineries in the San Joaquin Valley related to process heaters with a thermal output ranging from 12 to 15 million BTU/hr. Each agreement has a term of four months, but may be extended by agreement of the parties. Pursuant to each agreement, if we are able to retrofit the prospective customer's process heater in accordance with the specifications set forth in the agreement, the prospective customer will purchase a Duplex system from us. These prospective customers have no other financial obligations under the agreements.

### *Technical Components of our Duplex and ECC Technologies*

Our Duplex burner technology typically consists of a traditional industrial burner and a porous ceramic tile. When the uncombusted mix of gaseous fuel and air is directed at the tile, hot gas combusts within the tile itself. Because the fuel and air have more time to mix, the NOx-forming hot spots that are typically produced in an open flame are eliminated and a dramatically shorter flame is produced. NOx, a regulated pollutant comprised largely of nitrogen oxide and nitrogen dioxide, is greatly reduced without any external fans or associated power, thereby minimizing harmful emissions while improving system efficiency. A shorter flame allows for improved heat transfer and operation of the furnace at a higher capacity since it reduces the possibility of flame impingement and coking in a combustion

chamber.

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) electrodes inside the combustion chamber. ECC introduces a high voltage electric field into the combustion process to control the resulting flames electrically through the naturally forming ions. 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. ECC appears ideally applied to solid fuel combustion.

The basic components of both systems are either available 'off the shelf' or require manufacturing techniques that are well within the current state of the art. Thus our products are readily available and scalable for high volume demand.

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.

## Research and Development Plan

We have tested aspects of our Duplex and ECC technologies in our laboratory on our 1 million and 5 million BTU/hr research furnaces, our 1 million BTU/hr boiler simulator, and our 1 million BTU/hr solid fuel furnace. We have installed our Duplex technology in field test sites on an OTSG with thermal output at 42.5 million BTU/hr, and ranging periodically up to 55 million BTU/hr, and we are continuing such testing. We also continue to conduct solid fuel laboratory testing utilizing our ECC technology in conjunction with six parties who have contributed a total of \$110,000 in 2014 to our research. If successful, this would create a basis for further focused laboratory studies prior to any field demonstrations. 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.* With regard to our ECC technology, we have designed and built furnaces and burners at what we believe to be a commercially relevant scale. We have identified potential development partners and customers with whom we are engaged in discussions to apply our ECC technology to their particular uses at commercially relevant scales, which can be 1 million BTUs or greater. Our laboratory testing is ongoing in conjunction with the six parties that are offering their field know-how.

*Site demonstration at full scale.* We have begun to demonstrate our Duplex technology at a commercial site with an OTSG firing at 42.5 million BTU/hr, and ranging periodically up to 55 million BTU/hr, and have reached agreements for two further field site deployments associated with petroleum refinery process heaters. These process heater applications involve the retrofit of a single-burner, 15 million BTU/hr vertical cylindrical heater and a three burner, 12 million BTU/hr process heater. These early site demonstrations are aimed at retrofitting existing burners in single or multi-burner systems in order to evaluate our Duplex technology at full scale in several operating systems.

*First installation.* After initial completion of site demonstrations in various applications of our Duplex technology, we anticipate that these demonstrations will transition to validation and documentary phases with extended operation periods in the field. This would include validation from prospective customer users and environmental regulatory bodies. 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, 2014, we have filed 154 patent applications with the U.S. Patent and Trademark Office (USPTO) and certain foreign regulatory bodies related to our Duplex and ECC technologies, which remain pending. We have been granted 3 patents by the USPTO related to our ECC technology. 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.



## **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 emissions and operational performance, energy efficiency and overall cost-effectiveness. We intend to target the following segments of the combustion market:

- process heaters for petroleum refining and petrochemical processing,
- heating systems in package boilers, and
- larger-scale steam generation systems and power boilers.

In each segment, we plan to market solutions with our Duplex technology that we believe could simultaneously improve both pollution control and operational efficiency characteristics through (a) cost-effective retrofitting of our Duplex technology onto existing standard system designs, and (b) new system designs.

### *Partnership Strategy*

We believe that our technologies have the potential to transform industries that rely upon combustion, and are broadly applicable in large, scalable, global markets.

In addition to our existing agreements with three prospective customers for whom we are field testing our Duplex technology, we intend to form research and development partnerships to further develop our technologies within targeted market segments. Among the types of potential partners we will seek to establish relationships with both in the U.S. and globally, will be:

- end users of original equipment manufacturers' (OEMs) products and services interested in advancing the development of our technologies in order to address their operational needs;
- large OEMs interested in our technologies;

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.

## **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 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 with our Duplex technology to improve their environmental performance and energy efficiency, while at the same time making them more adaptable to 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,
- heating systems in package boilers, and
- larger-scale steam generation systems and power boilers



## Sales and Marketing Plan

*Partnership Strategy.* We believe that our technologies have the potential to transform industries that rely upon combustion, and are 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 with which we will seek to establish relationships in the U.S. and globally will be:

- End users of OEM products and services interested in advancing the development of our technology in order to address their operational needs;
- Large OEMs interested in our technology;
- 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 field development programs of our Duplex technology. These programs are aimed at our target industrial combustion markets and include Aera Energy, where an OTSG has been retrofitted with our technology, and two petroleum refineries, where process heaters will be retrofitted. Further, we continue to conduct solid fuel laboratory testing utilizing our ECC technology in conjunction with six parties who have contributed a total of \$110,000 in 2014 to our research.

*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 broad product value. Since we believe that our technology will provide greater economic value in comparison to our competitors, we plan to price our technology based upon the value that we believe it will provide in reduced air pollution control costs, including fines, and reduced maintenance and operating 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 of use and/or territories, (2) sale of our intellectual property rights within specific fields of use and/or territories, or (3) manufacturing the components required to enable our technologies and/or supplying a complete burner package through strategic subcontracting agreements. 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), John Zink Hamworthy Combustion (a subsidiary of Koch Industries and including Coen), Babcock and Wilcox, Westinghouse, Eclipse, General Electric, Haldor Topsøe, Hitachi, 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.

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 cost-effective means to reduce many pollutants at the source while improving operational efficiency. 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. 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.

While we believe that our technology could offer the advantages discussed above, we do not currently represent a significant competitive presence in our industry.

### **Research and Development Program**

Our research and development program consists of bench- and pilot-scale research anticipating future site demonstrations. The experience and industry contacts of our management, board of directors, and consultants with potential customers in the petroleum, petrochemical, and industrial steam applications inform our research program. These are supported by field development agreements, research agreements, and 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 \$2,327,000 and \$1,939,000, including the receipt of \$110,000 in 2014 from participants in the solid fuel research associated with ECC and \$88,000 in 2013 under a co-development agreement, on research and development for the years ended December 31, 2014 and 2013, 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, 2014, we have been awarded 3 patents related to ECC technology and have 154 patent applications pending. 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.

## **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, in the case of our ECC technology 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 emissions and efficiency reductions. 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. Further, efficiency improvements include enhanced mixing, lower excess air requirements, and improved heat transfer to the process. We believe such efficiency improvements could generate market demand regardless of the existing regulatory framework because they could result in savings to businesses that adopt our technology.

## **Employees**

As of February 26, 2015, we had 12 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.

## 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, 2014, we had a total accumulated deficit of \$21,260,000. 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.

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

The United States economy continues to experience slower growth than typically expected in a period of recovery. Further, recent developments include increased strength of the U.S. dollar compared to other currencies of the world and a significant decrease in the price of crude oil. Some financial and economic analysts predict that the world economy may be entering into a period of prolonged slow economic growth, or in certain regions recessions, 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 Stephen E. Pirnat, 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 February 26, 2015, 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 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.



***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 14.5% of our common stock as of February 26, 2015, 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 twelve month lock-up in our case and a six month lock-up in the case of our directors and officers, 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 an underwritten public offering of our common stock in February 2015, we and our directors and officers have entered into lock-up agreements through February 2016 in our case and through August 2015 in the case of our officers and directors (which periods 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 the underwriter, MDB Capital Group, 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 February 26, 2015, we had outstanding options and warrants for the purchase of 748,817 and 564,272 shares of common stock, respectively. Under the ClearSign Combustion Corporation 2011 Equity Incentive Plan and the ClearSign Combustion Corporation 2013 Consultant Stock Plan (collectively, the “Plans”), we have the ability to grant awards of options to employees, officers, directors, independent contractors and agents. Furthermore, as of February 26, 2015, we have reserved an additional 204,883 shares of common stock for such awards and the Plans provide that this number may increase quarterly by an amount of up to 11% 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 \$929,000 in 2014. 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 from which we are currently excluded as a smaller reporting company and an emerging growth company), 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, which is suitable and adequate for our current operations, under a triple net lease which expires in February 2017. Current monthly minimum rent is \$11,390 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.

**PART II**

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

Our common stock is listed on the NASDAQ Capital Market under the symbol "CLIR". The range of high and low sales prices of our common stock are presented below.

	2014		2013	
	High	Low	High	Low
First quarter	\$11.75	\$8.58	\$7.13	\$4.29
Second quarter	\$10.90	\$7.65	\$10.78	\$6.80
Third quarter	\$9.11	\$6.11	\$9.67	\$6.95
Fourth quarter	\$8.13	\$5.27	\$11.45	\$5.92

According to our transfer agent, as of February 26, 2015 we had approximately 252 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, 18 Lafayette Place, Woodmere, NY 11598 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.

### *Recent Issuances of Unregistered Securities*

Not applicable.

### **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 design and develop technologies that aim to improve both the energy efficiency and emission control characteristics of combustion systems. Our core technologies include our Duplex™ and Electrodynamic Combustion Control™ (ECC™) technologies. 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. 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. 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 are located in Seattle, Washington.

### **Plan of Operation**

We are pursuing development of our technologies to enable future sales. These activities entail field development projects in the case of our Duplex technology where we have successfully demonstrated our proprietary technology operating in our field testing with thermal output of 42.5 million BTU/hr, laboratory research in the case of our ECC technology where we have successfully demonstrated our proprietary technology operating in our research facility with thermal output of 2 million BTU/hr, and business development and marketing activities with established entities that use steam generators, process heaters, boilers, solid fuel burners, and other combustion systems as well as original equipment manufacturers. We intend to continue 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. After performing testing on our Duplex technology in our laboratory furnace with thermal output up to 5 million BTU/hr, we commenced field development work in the fourth quarter of 2014 with Southern California-based Aera Energy LLC (Aera Energy) to demonstrate and test the Duplex technology in an OTSG with a thermal output ranging from 40 to 62.5 million BTU/hr used to facilitate the production of heavy oil through enhanced oil recovery in California's San Joaquin Valley. To date, we have fired an OTSG located in Aera Energy's Belridge field outside Bakersfield, California at a rate of 42.5 million BTU/hr and met the San Joaquin Valley Air Pollution Control District's regulations under Rule 4320 requiring NOx emissions of 5 ppm (corrected at 3% Q). These results were achieved without major modifications to the burner or the need for FGR. During testing, Aera's OTSG unit continued

to supply steam at the capacity and quality required for oil field operations. We continue to conduct testing to address additional performance criteria in order to continue to validate the environmental and operational benefits of our Duplex technology. Assuming continued successful completion of the demonstration and testing, our agreement with Aera Energy includes time-sensitive pricing, delivery and installation terms, if elected, that will apply to future purchases of this Duplex application. In December 2014, we executed agreements regarding two further field tests with prospective customers at two separate petroleum refineries in the San Joaquin Valley related to process heaters with a thermal output ranging from 12 to 15 million BTU/hr. Each agreement has a term of four months, but may be extended by agreement of the parties. Pursuant to each agreement, if we are able to retrofit the prospective customer's process heater in accordance with the specifications set forth in the agreement, the prospective customer will purchase a Duplex system from us. These prospective customers have no other financial obligations under the agreements. We intend to continue field validation of our Duplex technology in order to produce sufficient data to demonstrate product attributes and dependability. Regarding our ECC technology, we continue to conduct solid fuel laboratory testing in conjunction with six parties who have contributed \$110,000 in 2014 to our research. If successful, this would create a basis for further focused laboratory studies prior to any field demonstrations. There is no assurance that additional revenues will be realized, terms will be reached, or a final agreement executed between us and any 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.

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 \$5.8 million.

In February 2015, we completed an underwritten public offering of our common stock whereby we sold 2,990,000 shares of common stock at \$5.85 per share resulting in gross proceeds of \$17.5 million and net proceeds of approximately \$16.3 million. We currently intend to use the net proceeds from this offering as follows: approximately \$6 million for research and development including capital expenditures, approximately \$3 million for protection of intellectual property, approximately \$2 million for business development and marketing, and the balance for working capital and general corporate purposes.

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 12 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.

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, development, and commercial acceptance of new technologies are, by their nature, unpredictable. Although we will undertake development and commercialization efforts with 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 audited financial statements for a more complete description of our significant accounting policies.

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 Ended December 31, 2014 and 2013

*Revenue, Cost of Revenue, and Gross Profit.* The Company reported revenue of \$93,000 in 2013 resulting from a solid fuel burner co-development project that resulted in an immaterial gross profit. No revenue was reported in 2014.

*Operating Expenses.* Operating expenses increased by \$2,000,000, or approximately 37%, to \$7,301,000 in 2014 compared to 2013. The Company increased its research and development (R&D) expenses by \$366,000 to \$2,217,000 for 2014. R&D expenses rose due primarily to the addition of personnel hired as a result of increased research activities resulting in a \$357,000 increase in compensation expense to \$1,357,000. R&D expenses also included an \$84,000 increase due to laboratory and field development costs related to the project for Aera Energy, LLC, build-to-suit equipment and expendables, all of which totaled \$384,000. These costs were offset by the receipt of \$110,000 from participants in solid fuel research associated with our ECC technology. G&A expenses increased by \$1,634,000, to \$5,084,000 for 2014. This increase resulted primarily from a one-time expense in the amount of \$943,000 due to the termination of an employment agreement with our former chief executive officer, an increase of \$350,000, to \$736,000, in business development and marketing consulting costs, and \$262,000 of costs resulting from the abandonment of patent applications filed in less cost beneficial jurisdictions.

*Loss from Operations.* Due to the increase in operating expenses, our loss from operations increased during 2014 by \$2,005,000, to \$7,301,000.

*Net Loss.* Primarily as a result of the increase in operating expenses, our net loss for 2014 was \$7,296,000 as compared to a net loss of \$5,285,000 for 2013, resulting in a \$2,011,000 increase in the net loss.

## Liquidity and Capital Resources

At December 31, 2014, our cash and cash equivalent balance totaled \$1,845,000 compared to \$2,688,000 at December 31, 2013. 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 February 2015, we completed the sale of 2,990,000 shares of our common stock resulting in net proceeds of approximately \$16.3 million. 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 February 2015, the registration statement allows the Company to offer up to an aggregate of \$6,008,000 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, 2014, our current assets were in excess of current liabilities resulting in working capital of \$719,000 compared to \$1,923,000 at December 31, 2013. The reduction in working capital resulted primarily from the use of cash for operations in 2014, which served to reduce our cash and cash equivalent balance by \$843,000 more than the \$5.8 million raised in our March 2014 stock offering, and from a \$470,000 current liability incurred from termination of an employment agreement with our former chief executive officer.

Operating activities for 2014 resulted in cash outflows of \$5,469,000 which were due primarily to the loss for the period of \$7,296,000, offset primarily by net changes in working capital, exclusive of cash, of \$733,000 related primarily to the liability associated with the termination of our former CEO, compensation paid with common stock of \$222,000, share based compensation from the Company's stock plans of \$365,000, abandonment of capitalized pending patents in less cost beneficial jurisdictions of \$262,000, and depreciation and amortization expense of \$243,000. 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 stock plans of \$146,000, and depreciation expense of \$209,000.

Investing activities for 2014 and 2013 resulted in cash outflows of \$1,254,000 and \$1,081,000, respectively. Development of capitalized patents and other intangible assets for 2014 and 2013 resulted in cash outflows of \$1,176,000 and \$845,000, respectively. Acquisition of fixed assets for 2014 and 2013 resulted in cash outflows of \$78,000 and \$236,000, respectively, and related primarily to research and development equipment.

Financing activities for 2014 resulted in \$5,880,000 of cash inflows, which resulted primarily from the issuance of 812,500 shares of common stock at \$8.00 per share resulting in gross proceeds of \$6,500,000 and net cash proceeds of \$5,780,000. Additionally, we raised \$100,000 through the exercise of stock options. 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.

#### **Off-Balance Sheet Transactions**

We do not have any off-balance sheet transactions.

#### **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 (the “Company”) as of December 31, 2014 and 2013, and the related statements of operations, stockholders’ equity, and cash flows for each of the years in the two-year period ended December 31, 2014. 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, 2014 and 2013, and the results of its operations and its cash flows for each of the years in the two-year period ended December 31, 2014 in conformity with accounting principles generally accepted in the United States of America.

/s/ GUMBINER SAVETT INC.

February 26, 2015

Santa Monica, California



**ClearSign Combustion Corporation****Balance Sheets**

	December 31,	
	2014	2013
<b>ASSETS</b>		
Current Assets:		
Cash and cash equivalents	\$1,845,000	\$2,688,000
Prepaid expenses	109,000	118,000
Total current assets	1,954,000	2,806,000
Fixed assets, net	263,000	427,000
Patents and other intangible assets, net	2,372,000	1,459,000
Other assets	10,000	10,000
Total Assets	\$4,599,000	\$4,702,000
<b>LIABILITIES AND STOCKHOLDERS' EQUITY</b>		
Current Liabilities:		
Accounts payable	\$253,000	\$297,000
Accrued compensation and taxes	982,000	586,000
Total current liabilities	1,235,000	883,000
Long Term Liabilities:		
Long-term accrued compensation and taxes	372,000	-
Deferred rent	33,000	31,000
Total liabilities	1,640,000	914,000
Commitments		
Stockholders' Equity:		
Preferred stock, \$0.0001 par value, zero shares issued and outstanding	-	-
Common stock, \$0.0001 par value, 9,681,476 and 8,810,674 shares issued and outstanding at December 31, 2014 and 2013, respectively	1,000	1,000
Additional paid-in capital	24,218,000	17,751,000
Accumulated deficit	(21,260,000)	(13,964,000)
Total stockholders' equity	2,959,000	3,788,000
Total Liabilities and Stockholders' Equity	\$4,599,000	\$4,702,000

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

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**ClearSign Combustion Corporation****Statements of Operations**

	For the Year Ended December 31,	
	2014	2013
Co-development revenue	\$-	\$93,000
Cost of co-development revenue	-	88,000
Gross profit	-	5,000
Operating expenses:		
Research and development	2,217,000	1,851,000
General and administrative	5,084,000	3,450,000
Total operating expenses	7,301,000	5,301,000
Loss from operations	(7,301,000)	(5,296,000)
Other income:		
Interest income	5,000	11,000
Net Loss	\$(7,296,000)	\$(5,285,000)
Net Loss per share - basic and fully diluted	\$(0.77 )	\$(0.60 )
Weighted average number of shares outstanding - basic and fully diluted	9,507,185	8,795,810

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

**ClearSign Combustion Corporation****Statement of Stockholders' Equity****For the Years Ended December 31, 2014 and 2013**

	Common Stock		Additional	Accumulated	Total
	Shares	Amount	Paid-In Capital	Deficit	Stockholders' Equity
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
Shares issued in registered direct offering (\$8.00 per share)	812,500	-	6,500,000	-	6,500,000
Issuance costs of registered direct offering	-	-	(812,000 )	-	(812,000 )
Share based payments of warrants	-	-	92,000	-	92,000
Shares issued for services (\$10.26 per share)	21,625	-	222,000	-	222,000
Shares issued upon exercise of options (\$2.20 per share)	23,337	-	35,000	-	35,000
Shares issued upon exercise of options (\$4.88 per share)	13,340	-	65,000	-	65,000
Share based compensation	-	-	365,000	-	365,000
Net loss	-	-	-	(7,296,000 )	(7,296,000 )
Balances at December 31, 2014	9,681,476	\$ 1,000	\$ 24,218,000	\$(21,260,000)	\$ 2,959,000

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

**ClearSign Combustion Corporation****Statements of Cash Flows**

	For the Year Ended December 31,	
	2014	2013
Cash flows from operating activities:		
Net loss	\$ (7,296,000 )	\$ (5,285,000 )
Adjustments to reconcile net loss to net cash used in operating activities:		
Common stock issued for services	222,000	252,000
Share based payments	365,000	146,000
Depreciation and Amortization	243,000	209,000
Abandonment of capitalized patents	262,000	4,000
Deferred rent	2,000	(4,000 )
Change in operating assets and liabilities:		
Prepaid expenses	9,000	(58,000 )
Accounts payable	(44,000 )	21,000
Accrued compensation	768,000	418,000
Net cash used in operating activities	(5,469,000 )	(4,297,000 )
Cash flows from investing activities:		
Acquisition of fixed assets	(78,000 )	(236,000 )
Disbursements for patents and other intangible assets	(1,176,000 )	(845,000 )
Net cash used in investing activities	(1,254,000 )	(1,081,000 )
Cash flows from financing activities:		
Proceeds from issuance of common stock for cash, net of offering costs	5,780,000	39,000
Proceeds from exercise of stock options	100,000	-
Net cash provided by financing activities	5,880,000	39,000
Net decrease in cash and cash equivalents	(843,000 )	(5,339,000 )
Cash and cash equivalents, beginning of year	2,688,000	8,027,000
Cash and cash equivalents, end of year	\$ 1,845,000	\$ 2,688,000

**Supplemental disclosure of non-cash operating and financing activities:*****During the year ended December 31, 2014, the Company:***

issued warrants to purchase 20,313 shares of common stock valued at \$92,000 as part of a placement agent fee related to the March 2014 registered direct offering of common stock.

issued 7,537 shares of common stock through a net settlement cashless exercise of stock options to purchase 10,000 shares at \$2.20 per share in July 2014 when the closing price was \$8.93 per share.

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

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## **ClearSign Combustion Corporation**

### **Notes to Financial Statements**

#### **Note 1 – Organization and Description of Business**

ClearSign Combustion Corporation (ClearSign or the Company) designs, develops, and markets technologies for the purpose of improving key performance characteristics of combustion systems, including emission and operational performance, energy efficiency and overall cost-effectiveness. The Company's primary technologies include its Duplex™ technology, which achieves very low emissions without the need of external flue gas recirculation, selective catalytic reduction, or higher excess air operation, and 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. The Company is located in Seattle, Washington and was incorporated in the state of Washington in 2008.

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 \$21,260,000 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**

##### Use of Estimates

The preparation of financial statements in conformity with accounting principles generally accepted in the United States 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. There were no revenues for the year ended December 31, 2014 and \$93,000 for the year ended December 31, 2013.

### 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 may at times 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 useful 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 two 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.

### 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.

### 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.

### 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. In 2014, the Company received \$110,000 to partially fund certain laboratory research activities. Since these funds were provided without expectation of reciprocation except notification of the research results, the Company recognized these funds when they were received and recorded them as an offset to research and development expense.

### 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 sheets.

### 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. At December 31, 2014 and 2013, potentially dilutive shares outstanding amounted to 1,208,089 and 1,109,724, respectively.

### Reclassifications

Certain prior period financial statement amounts have been reclassified to conform to current period presentation.

### Recently Issued Accounting Pronouncements

In June 2014, the Financial Accounting Standards Board (FASB) issued Accounting Standards Codification (ASC) 2014-10 which eliminated in its entirety the differential reporting requirements applicable to development stage entities under ASC 915, *Development Stage Entities*. Thus, the distinction between development stage entities and other types of reporting entities will no longer exist, and all differential reporting requirements applicable to development stage entities were removed from United States generally accepted accounting principles. Specifically, the amendments eliminated the requirements for development stage entities to (1) present inception-to-date information in the income statement, cash flows statement, and statement of stockholders' equity, (2) identify the financial statements as those of a development stage entity, (3) provide a description of the development stage activities in which the entity is engaged, and (4) disclose in the first year in which the entity becomes an operating company that it had previously been in the development stage. Adoption of ASC 2014-10 is required for annual reporting periods beginning after December 15, 2014 with early application permitted. The Company has elected early application of this standard.

Management does not believe that any other 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, 2014, the market value of the Company's common stock held by non-affiliates totaled \$71 million.

**Note 3 – Fixed Assets**

Fixed assets are summarized as follows:

	December 31,	
	2014	2013
Machinery and equipment	\$646,000	\$633,000
Office furniture and equipment	98,000	95,000
Leasehold improvements	124,000	62,000
Accumulated depreciation	(605,000)	(366,000)
	263,000	424,000
Construction in progress	-	3,000
	\$263,000	\$427,000

**Note 4 – Patents and Other Intangible Assets**

Patents and other intangible assets are summarized as follows:

	December 31,	
	2014	2013
Patents		
Patents pending	\$2,262,000	\$1,444,000
Issued patents	67,000	-
	2,329,000	1,444,000
Trademarks	36,000	7,000

Other	8,000	8,000
	2,373,000	1,459,000
Accumulated amortization	(1,000 )	-
	\$2,372,000	\$1,459,000

Future amortization expense associated with awarded patents as of December 31, 2014 is estimated as follows:

2015	\$7,000
2016	7,000
2017	7,000
2018	7,000
2019	7,000
Thereafter	31,000
	66,000

During the years ended December 31, 2014 and 2013, the Company recorded an impairment loss of \$262,000 and \$4,000, respectively, from abandonment of capitalized patents pending.

#### **Note 5 – Termination of Employment Agreement**

The Company and its former Chief Executive Officer, Richard F. Rutkowski, entered into an agreement in December 2014 terminating a prior employment agreement. Under this agreement, Mr. Rutkowski will be paid his annual salary of \$359,000 through December 31, 2016 as well as a bonus of \$60,000 in 2015, provided employee benefits through December 2015, and received accelerated vesting on 15,625 stock options with an exercise price of \$4.88 per share and 14,219 stock options with an exercise price of \$9.90 per share which terminate in March 2015.



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

Expected life	0.25 years	
Weighted average volatility	68	%
Forfeiture rate	46	%
Weighted average risk-free interest rate	0.04	%
Expected dividend rate	-	

The liability incurred under this agreement totaled \$943,000 which was recognized in general and administrative expense in 2014 and included the \$50,000 fair value of the stock option provisions. At December 31, 2014, the remaining liability totaled \$842,000 with \$470,000 due in 2015 and \$372,000 due in 2016.

#### Note 6 - Income Taxes

Through December 31, 2014, the Company incurred net operating losses for federal tax purposes of approximately \$20,100,000. The net operating loss carry forward may be used to reduce taxable income through the years 2028 to 2034. 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:

	2014	2013
Expected tax benefit at 34%	\$(2,481,000)	\$(1,797,000)
Change in valuation allowance	2,390,000	1,615,000
Other	91,000	182,000
Provision for income taxes	\$-	\$-

The net deferred tax asset at December 31, 2014 and 2013 was \$7,080,000 and \$4,690,000, 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:

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	2014	2013
Net operating loss carry forwards	\$6,850,000	\$4,780,000
Accrued liabilities	310,000	30,000
Stock compensation	(20,000 )	(30,000 )
Depreciation	(40,000 )	(80,000 )
Prepaid expenses	(30,000 )	(20,000 )
Other	10,000	10,000
Deferred tax assets, net	7,080,000	4,690,000
Valuation allowance	(7,080,000)	(4,690,000)
Net deferred tax asset	\$-	\$-

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Although the Company is not under examination, the tax years for 2011 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, 2014 and 2013, there was no accrued interest or penalties related to uncertain tax positions.

## **Note 7 – 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 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 \$5.8 million. Expenses of the offering approximated \$0.8 million. Cash expenses included placement agent fees of \$488,000, placement agent legal and other fees of \$75,000, issuer legal fees of \$113,000, and other costs of \$44,000. Non-cash expenses consisted of a warrant to purchase 20,313 shares of the Company's common stock at \$10.00 per share exercisable until March 2019 valued at \$92,000.

As described in Note 11, the Company completed a \$17.5 million underwritten public offering of common stock in February 2015.

### Equity Incentive Plan

The Company has an Equity Incentive Plan (the 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 Plan and establish the grant terms, including the grant price, vesting period and exercise date. As of December 31, 2014, the number of shares reserved for issuance under the Equity Incentive Plan totaled 1,077,005 shares. The 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 Plan is as follows:

	2014	2013
Reserved but unissued shares under the Equity Incentive Plan, beginning of year	249,736	480,260
Increases in the number of authorized shares under the Equity Incentive Plan	85,705	5,866
Grants of stock options	(141,880)	(206,390)
Stock option forfeitures	24,688	-
Exercise of stock options	39,140	-
Stock grants	(14,625 )	(30,000 )
Stock grant forfeitures	-	-
Reserved but unissued shares under the Equity Incentive Plan, end of year	242,764	249,736

### Stock Options

In 2014, the Company granted 122,880 and 19,000 stock options, respectively, under the Plan to certain employees and consultants. The stock options have exercise prices of \$9.90 and \$8.22 per share, the grant date fair values, 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 Company's historical stock price volatility. 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 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	74	%
Forfeiture rate	13	%
Weighted average risk-free interest rate	1.93	%
Expected dividend rate	-	

The fair value of stock options granted estimated on the date of grant using the Black-Scholes option valuation model was \$799,000. The recognized compensation expense associated with these grants in 2014 was \$178,000.

In 2013, the Company granted 203,990 and 2,400 stock options, respectively, under the Plan to certain employees. The stock options have exercise prices of \$4.88 and \$7.33 per share, the grant date fair values, a contractual life of 10 years, and vest over four years. 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 2014 and 2013 was \$122,000 and \$76,000, respectively.

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

	2014			2013		
	Options	Weighted Average Exercise Price	Weighted Average Remaining Contractual Life (in years)	Options	Weighted Average Exercise Price	Weighted Average Remaining Contractual Life (in years)
Outstanding at January 1	565,765	\$ 3.19	8.21	359,375	\$ 2.20	8.75
Granted	141,880	\$ 9.68	7.70	206,390	\$ 4.91	9.01
Exercised	(39,140 )	\$ 3.11	-	-	-	-
Forfeited/Expired/Exchanged	(24,688 )	\$ 7.36	-	-	-	-
Outstanding at December 31	643,817	\$ 4.46	5.67	565,765	\$ 3.19	8.21
Exercisable at December 31	441,958	\$ 3.50	4.47	317,354	\$ 2.44	7.87

In accordance with the Plan, 7,504 stock options were exercised in 2014 prior to vesting and the resulting shares of common stock were issued with a declining repurchase right in favor of the Company at the exercise price of \$4.88 per share should the employee terminate employment or upon other related circumstances prior to December 31, 2016. At December 31, 2014, all 7,504 shares remained subject to this repurchase right.

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

	2014		2013	
	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	248,411	\$ 4.15	117,188	\$ 2.20
Granted	141,880	\$ 9.68	206,390	\$ 4.91
Vested	(156,240)	\$ 5.50	(75,167 )	\$ 3.21
Exercised	(7,504 )	\$ 4.88	-	-
Forfeited/Expired/Exchanged	(24,688 )	\$ 7.36	-	-
Non-vested stock options at December 31	201,859	\$ 6.57	248,411	\$ 4.15

The estimated aggregate pretax intrinsic value of the Company's outstanding vested stock options at December 31, 2014 is \$1,788,000. The intrinsic value is the difference between the Company's common stock price and the option exercise prices multiplied by the number of in-the-money options. This amount changes based on the fair value of the

Company's common stock.

At December 31, 2014, there was \$601,000 of total unrecognized compensation cost related to non-vested stock option-based compensation arrangements granted under the Plan. That cost is expected to be recognized in future years as follows:

2015	\$229,000
2016	209,000
2017	153,000
2018	10,000
	\$601,000

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The recognized compensation cost associated with the Plan is as follows:

	2014	2013
Research and development	\$99,000	\$42,000
General and administrative	240,000	73,000
Effect on net loss	\$339,000	\$115,000
Effect on net loss per share	\$0.04	\$0.01

### Stock Grants

In 2014 and 2013, the Company granted 14,625 and 30,000 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 \$10.26 and \$5.00 per share for a total value of \$150,000 in 2014 and 2013, respectively, which the Company recognized in general and administrative expense.

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 September 30, 2016. The Company recognized general and administrative compensation expense of \$26,000 and \$31,000 in 2014 and 2013, respectively. 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:

2015	\$26,000
2016	20,000
	\$46,000

### Consultant Stock Plan

In May 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 in May 2013 totaled 75,000 shares and on December 31, 2014 totaled 83,858 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 7,000 and 11,250 shares from the Consultant Plan to a consultant for services in 2014 and 2013, respectively. The fair value of the stock at the time of grant was \$10.26 and \$9.12 per share for a total value of \$72,000 in 2014 and \$102,000 in 2013 which the Company recognized in general and administrative expense.

Activity under the Consultant Plan from its inception to date is as follows:

	2014	2013
Reserved but unissued shares under the Consultant Plan	64,037	75,000
Increases in the number of authorized shares under the Consultant Plan	8,571	287
Stock grants	(7,000 )	(11,250)
Stock grant forfeitures	-	-
Reserved but unissued shares under the Consultant Plan	65,608	64,037

Warrants

In conjunction with the March 2014 registered direct offering of common stock, the Company granted a warrant to the placement agent to purchase 20,313 common stock shares at \$10.00 per share exercisable until March 2019. The fair value of these warrants was estimated to be \$92,000 on the date of the grant using the Black-Scholes option-pricing model. Expected volatility was determined based upon the historical prices of the Company's common stock. 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)	5
Weighted average volatility	74 %
Weighted average risk-free interest rate	1.49%
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:

	2014		2013	
	Warrants	Weighted Average Exercise Price	Warrants	Weighted Average Exercise Price
Outstanding at beginning of year	543,959	\$ 3.92	561,368	\$ 3.86
Granted	20,313	\$ 10.00	-	-
Exercised	-	-	(17,409 )	\$ 2.20
Forfeited/Expired	-	-	-	-
Outstanding at end of year	564,272	\$ 4.14	543,959	\$ 3.92

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, 2014:

Exercise Price	Total Outstanding Warrants		
	Warrants	Weighted Average Exercise Price	Life (in years)
\$ 1.80	80,000	\$ 1.80	6.13
\$ 2.20	118,959	\$ 2.20	1.36
\$ 5.00	345,000	\$ 5.00	2.32
\$ 10.00	20,313	\$ 10.00	4.18

564,272 \$ 4.14

**Note 8 – Retirement Plan**

The Company has a defined contribution retirement plan covering all of its employees whereby the Company matches employee contributions up to 3% of each employee's 2014 and 2013 earnings. The Company's matching contribution expense totaled \$53,000 and \$38,000 in 2014 and 2013, respectively.

**Note 9 – Related Party Transactions**

In 2013, the Company incurred consulting fees of \$103,000 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, 2014.

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**Note 10 – Commitments and Contingencies**

On February 3, 2015, the Company and its newly-appointed Chief Executive Officer, Stephen E. Pirnat entered into an employment agreement (the Agreement) which terminates on December 31, 2017, unless earlier terminated. Compensation under the Agreement includes an annual salary of \$350,000 with annual cost-of-living adjustments, a grant of stock options as described in Note 11, annual cash bonuses that may equal up to 60% of his annual salary and equity bonuses based on performance standards established by the Compensation Committee of the Board of Directors, medical and dental benefits for Mr. Pirnat and his family, and relocation expenses up to approximately \$100,000. 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. In the event of a change in control, Mr. Pirnat would receive one year's compensation and all previously granted stock options would vest in full.

The Company has agreements with its three independent directors to compensate them annually. 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 annually.

The Company has a triple net lease for office and laboratory space through February 2017. Under the terms of the lease, the Company paid no rent for the period November 2011 to February 2012 and for February 2014. Rent escalates 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 \$2,000 was accrued in 2014. 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 \$3,000 per month. Minimum future payments under this lease at December 31, 2014 are as follows:

2015	\$ 137,000
2016	141,000
2017	24,000
	\$ 302,000

For the years ended December 31, 2014 and 2013, rent expense amounted to \$161,000 and \$135,000, respectively.

The Company has a Field Test Agreement with Southern California-based Aera Energy LLC to demonstrate and test the Duplex technology in a once through steam generator (OTSG) used to facilitate the production of heavy oil in California's San Joaquin Valley. Under the terms of the agreement, the Company has retrofit an OTSG unit in order to achieve certain performance criteria. Assuming successful completion of the demonstration and testing, the agreement

also includes time-sensitive pricing, delivery and installation terms, if elected, that will apply to future purchases by Aera Energy LLC of this Duplex application.

#### **Note 11 – Subsequent Events**

In February 2015, the Company completed an underwritten public offering of common stock whereby 2,990,000 shares were issued at \$5.85 per share. Gross proceeds from the offering totaled \$17.5 million and net cash proceeds approximated \$16.3 million. Expenses of the offering approximated \$1.2 million, including underwriting fees of \$1,050,000, underwriter legal fees and other costs of \$55,000, and other costs of \$110,000. The offering was underwritten by MDB Capital Group, LLC, a significant beneficial owner of the Company's common stock at December 31, 2014.

In February 2015, the Company and its Chief Executive Officer, Stephen E. Pirnat, entered into an employment agreement as described in Note 10. In accordance with the employment agreement, the Company immediately granted to Mr. Pirnat 100,000 stock options under the Equity Incentive Plan. The stock options have an exercise price of \$5.97 per share, the grant date fair value, vest on February 3, 2016, and have a contractual life of 10 years. The fair value of stock options estimated on the date of grant using the Black-Scholes option valuation model was \$334,000. Further, effective April 1, 2015, the Company will issue to Mr. Pirnat an option to purchase 200,000 shares of common stock with an exercise price equal to the fair value of the common stock on April 1, 2015. The option will vest 50% on April 1, 2016 and 50% on April 1, 2017, and will have a contractual life of 10 years.

In February 2015, the Company authorized 23,034 shares of common stock to be issued under the Equity Incentive Plan to its three independent directors in accordance with board agreements and which will be earned quarterly for service in 2015. The fair value of the stock at the time of grant was \$5.97 per share for a total value of \$138,000 which the Company will recognize in general and administrative expense on a pro-rated quarterly basis in 2015.

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

None.

## **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, 2014. 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, 2014, 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**

None.

## **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 2015 Annual Meeting of Shareholders to be filed with the Securities and Exchange Commission ("SEC") within 120 days of the fiscal year ended December 31, 2014.

#### **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 2015 Annual Meeting of Shareholders to be filed with the SEC within 120 days of the fiscal year ended December 31, 2014.

## 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 2015 Annual Meeting of Shareholders.

### Equity Compensation Plan Information

The table below provides information as of December 31, 2014 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	723,817	\$ 4.17	242,764
Equity compensation plans not approved by security holders	-	-	-
	723,817	\$ 4.17	242,764

The above schedule excludes stock grants of 190,424 and 18,250 shares under the 2011 Equity Incentive Plan and the 2013 Consultant Stock Plan, respectively.

**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 2015 Annual Meeting of Shareholders to be filed with the SEC within 120 days of the fiscal year ended December 31, 2014.

**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 2015 Annual Meeting of Shareholders to be filed with the SEC within 120 days of the fiscal year ended December 31, 2014.

**PART IV**

**Item 15. Exhibits, 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*
4.2	Form of Common Stock Purchase Warrant issued to MDB Capital Group LLC on April 24, 2012 (1)
4.3	Form of Common Stock Purchase Warrant issued on February 16, 2011 to various consultants (1)
4.4	Warrant issued to Brean Capital LLC on March 5, 2014 (4)
10.3.2	Form of Lock-Up Agreement dated February 4, 2015 executed by MDB Capital Group, LLC*
10.5	Office Lease Agreement (1)
10.6	Form of Confidentiality and Proprietary Rights Agreement *
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 February 3, 2015 between the registrant and Stephen E. Pirnat (5)+
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 (4)+
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	Form of Lock-Up Agreement dated March 5, 2014 (4)
10.28	First Amendment to Office Lease Agreement dated December 17, 2013 (4)
10.29	Separation, Severance and Release Agreement dated December 10, 2014 between the registrant and Richard F. Rutkowski (6)+
23.1	Consent of Gumbiner Savett Inc., Independent Registered Public Accounting Firm*
31.1	Certification of Principal Executive Officer pursuant to Section 302 of the Sarbanes-Oxley Act of 2002*
31.2	Certification of Principal Financial Officer pursuant to Section 302 of the Sarbanes-Oxley Act of 2002*
32.1	Certification of Principal Executive Officer and Principal Financial Officer pursuant to Section 906 of the Sarbanes-Oxley Act of 2002*
101	The following financial statements from the registrant's Annual Report on Form 10-K for 2014, 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.
- (4) Incorporated by reference from the registrant's Annual Report on Form 10-K filed with the Securities and Exchange Commission on March 11, 2014.
- (5) Incorporated by reference from the registrant's Current Report on Form 8-K filed with the Securities and Exchange Commission on February 5, 2015.
- (6) Incorporated by reference from the registrant's Current Report on Form 8-K filed with the Securities and Exchange Commission on December 12, 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.

**CLEARSIGN  
COMBUSTION  
CORPORATION**

Date: February 26, 2015 By: /s/ Stephen E. Pirnat  
Stephen E. Pirnat  
Chief Executive Officer

Date: February 26, 2015 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.

Date: February 26, 2015 /s/ Stephen E. Pirnat  
Stephen E. Pirnat  
Chief Executive Officer and Director  
(Principal Executive Officer)

Date: February 26, 2015 /s/ James N. Harmon  
James N. Harmon  
Chief Financial Officer  
(Principal Financial and Accounting Officer)

Date: February 26, 2015 /s/ Lon E. Bell  
Lon E. Bell, Ph.D., Director

Date: February 26, 2015 /s/ David B. Goodson  
David B. Goodson, Director

Date: February 26, 2015 /s/ Scott P. Isaacson  
Scott P. Isaacson, Director

Date: February 26, 2015 /s/ Jeffrey L. Ott

Jeffrey L. Ott, Director

EXHIBIT INDEX

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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 February 3, 2015 between the registrant and Stephen E. Pirnat (5)+
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 (4)+
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	Form of Lock-Up Agreement dated March 5, 2014 (4)
10.28	First Amendment to Office Lease Agreement dated December 17, 2013 (4)
10.29	Separation, Severance and Release Agreement dated December 10, 2014 between the registrant and Richard F. Rutkowski (6)+
23.1	Consent of Gumbiner Savett Inc., Independent Registered Public Accounting Firm*
31.1	Certification of Principal Executive Officer pursuant to Section 302 of the Sarbanes-Oxley Act of 2002*
31.2	Certification of Principal Financial Officer pursuant to Section 302 of the Sarbanes-Oxley Act of 2002*
32.1	Certification of Principal Executive Officer and Principal Financial Officer pursuant to Section 906 of the Sarbanes-Oxley Act of 2002*
101	The following financial statements from the registrant's Annual Report on Form 10-K for 2014, 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.



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- (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.
- (4) Incorporated by reference from the registrant's Annual Report on Form 10-K filed with the Securities and Exchange Commission on March 11, 2014.
- (5) Incorporated by reference from the registrant's Current Report on Form 8-K filed with the Securities and Exchange Commission on February 5, 2015.
- (6) Incorporated by reference from the registrant's Current Report on Form 8-K filed with the Securities and Exchange Commission on December 12, 2014.