

CLEARSIGN COMBUSTION CORP
Form S-1/A
February 07, 2012

As filed with the Securities and Exchange Commission on February 7, 2012

Registration No. 333-177946

UNITED STATES SECURITIES AND EXCHANGE COMMISSION

Washington, D.C. 20549

PRE-EFFECTIVE AMENDMENT NO. 2

TO

FORM S-1

REGISTRATION STATEMENT UNDER THE SECURITIES ACT OF 1933

CLEARSIGN COMBUSTION CORPORATION

(Exact Name of Registrant as Specified in Its Charter)

Washington	3823	26-2056298
<i>(State or other jurisdiction of incorporation or organization)</i>	<i>(Primary Standard Industrial Classification Code Number)</i>	<i>(I.R.S. Employer Identification No.)</i>

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Seattle, Washington 98168

(206) 673-4848

(Address, including zip code, and telephone number, including area code, of registrant's principal executive offices)

Richard Rutkowski

Chief Executive Officer

ClearSign Combustion Corporation

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As soon as practicable after the effective date of this Registration Statement.

(Approximate date of commencement of proposed sale to the public)

If any of the securities being registered on this Form are to be offered on a delayed or continuous basis pursuant to Rule 415 under the Securities Act of 1933 check the following box. x

If this Form is filed to register additional securities for an offering pursuant to Rule 462(b) under the Securities Act, please check the following box and list the Securities Act registration statement number of the earlier effective registration statement for the same offering. "

If this Form is a post-effective amendment filed pursuant to Rule 462(c) under the Securities Act, check the following box and list the Securities Act registration statement number of the earlier effective registration statement for the same offering. "

If this Form is a post-effective amendment filed pursuant to Rule 462(d) under the Securities Act, check the following box and list the Securities Act registration statement number of the earlier effective registration statement for the same offering. "

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, or a smaller reporting company. See the definitions of "large accelerated filer," "accelerated filer" and "smaller reporting company" in Rule 12b-2 of the Exchange Act (check one):

Large accelerated filer " Accelerated filer "
 Non-accelerated filer " Smaller reporting company x
 (Do not check if a smaller reporting company)

CALCULATION OF REGISTRATION FEE

Title of Each Class of Securities to be Registered	Amount to be Registered (1)	Proposed	Proposed	Amount of Registration Fee
		Maximum Offering Price Per Share	Maximum Aggregate Offering Price	
Common Stock, \$0.0001 par value per share(2)	3,450,000	\$ 4.00	\$ 13,800,000	\$ 1,581.48
Underwriter Warrant (3)(4)	1	\$ —	\$ 100	\$ —
Common Stock underlying Underwriter's Warrant	345,000	\$ 4.00	\$ 1,380,000	\$ 158.15
Common Stock, \$0.0001 par value per share (5)	454,545	\$ 4.00	\$ 1,818,180	\$ 208.36
Total	4,249,546	\$ 4.00	\$ 16,998,280	\$ 0.00 (6)

Estimated solely for the purpose of calculating the amount of the registration fee pursuant to Rule 457(o) under the (1) Securities Act of 1933, as amended, for the public offering and Rule 457(a) for the offering by the selling security holder.

Offered pursuant to the registrant's initial public offering, including 450,000 shares of our common stock (2) representing 15% of the shares offered to the public that the underwriter has the option to purchase to cover over-allotments, if any.

(3) No registration fee required pursuant to Rule 457(g) under the Securities Act of 1933.

(4) Represents a warrant granted to the underwriter to purchase shares of common stock in an amount up to 10% of the number of shares sold to the public in this offering.

(5) Represents shares of the registrant's common stock being offered for resale by the selling security holder named in this registration statement.

(6) On November 14, 2011 the registrant paid a filing fee of \$3,365.02.

The Registrant hereby amends this Registration Statement on such date or dates as may be necessary to delay its effective date until the Registrant shall file a further amendment which specifically states that this Registration Statement shall thereafter become effective in accordance with Section 8(a) of the Securities Act of 1933, as amended, or until this Registration Statement shall become effective on such date as the Commission, acting pursuant to said Section 8(a), may determine.

EXPLANATORY NOTE

This registration statement contains two forms of prospectus, as set forth below.

Public Offering Prospectus. A prospectus to be used for the initial public offering by the registrant of 3,000,000 shares of common stock, not including the over-allotment option (the “Public Offering Prospectus”), through the underwriter named on the cover page of the Public Offering Prospectus.

Selling Security Holder Prospectus. A prospectus to be used in connection with the potential resale by the selling security holder of up to an aggregate of 454,545 shares of the registrant’s common stock (the “Selling Security Holder Prospectus”).

The Public Offering Prospectus and the Selling Security Holder Prospectus will be identical in all respects except for the following principal points:

they contain different front covers;

they contain different tables of contents;

the summary of The Offering is deleted from the Selling Security Holder Prospectus;

they contain different Use of Proceeds sections;

a Shares Registered for Resale section is included in the Selling Security Holder Prospectus;

the Underwriting section from the Public Offering Prospectus is deleted from the Selling Security Holder Prospectus and a Plan of Distribution section is inserted in its place;

the Legal Matters section in the Selling Security Holder Prospectus deletes the reference to counsel for the underwriter; and

they contain different back covers.

The registrant has included in this registration statement, after the financial statements, a set of alternate pages to reflect the foregoing differences between the Selling Security Holder Prospectus and the Public Offering Prospectus.

THE INFORMATION IN THIS PROSPECTUS IS NOT COMPLETE AND MAY BE CHANGED. THESE SECURITIES MAY NOT BE SOLD UNTIL THE REGISTRATION STATEMENT FILED WITH THE SECURITIES AND EXCHANGE COMMISSION IS EFFECTIVE. THIS PROSPECTUS IS NOT AN OFFER TO SELL THESE SECURITIES AND WE ARE NOT SOLICITING AN OFFER TO BUY THESE SECURITIES IN ANY STATE WHERE THE OFFER OR SALE IS NOT PERMITTED.

SUBJECT TO COMPLETION, DATED FEBRUARY 7, 2012

PRELIMINARY PROSPECTUS

3,000,000 Shares of Common Stock

ClearSign Combustion Corporation is offering 3,000,000 shares of its common stock, \$0.0001 par value.

This is an initial public offering of our common stock. We expect the public offering price to be between \$[_____] and \$[_____] per share. There is presently no public market for our common stock. We intend to apply for listing of our common stock on The Nasdaq Capital Market under the symbol "CLIR", which listing we expect to occur upon consummation of this offering. No assurance can be given that our application will be approved. If the application is not approved, we will not complete this offering.

Concurrent with the public offering, Integrated Surgical Systems, Inc., the selling security holder, may sell up to an aggregate of 454,545 shares of our common stock. Although a specific price cannot be determined at this time, we have estimated an initial price for the sale of these shares to be between \$[_____] and \$[_____] per share. If we are successful in listing our shares on The Nasdaq Capital Market, the selling security holder may sell at prevailing market prices or privately negotiated prices. We will not receive any of the proceeds from the sale of shares to be offered by the selling security holder.

Investing in our common stock involves a high degree of risk. See "Risk Factors" beginning on page 7 for a discussion of information that should be considered in connection with an investment in our securities.

Neither the Securities and Exchange Commission nor any state securities commission has approved or disapproved of these securities or determined if this prospectus is truthful or complete. Any representation to the contrary is a criminal offense.

MDB Capital Group LLC is the underwriter for our initial public offering. MDB Capital Group LLC has provided placement agency services and consulting services to us in the past. If we sell all of the common stock we are offering, we will pay to MDB Capital Group LLC approximately \$[_____], or [____]%, of the gross proceeds of this offering and non-accountable expenses equal to \$160,000. MDB Capital Group LLC and its associated persons collectively hold directly 1,003,506 shares of our common stock, representing 19.0% of the outstanding shares. Therefore, we have engaged _____ as a "qualified independent underwriter," to which we will pay a fee of \$[_____]. For a more complete discussion of the compensation we will pay to the underwriter, please see the section of this prospectus titled "Underwriting". In connection with this offering, we have also agreed to issue to MDB Capital Group LLC a warrant to purchase shares of our common stock in an amount up to 10% of the shares of common stock sold in the public offering, with an exercise price equal to 125% of the per-share public offering price.

	Per Share	Total
Public offering price	\$	\$
Underwriting discounts and commissions	\$	\$
Proceeds to us (before expenses)(1)	\$	\$

(1) Does not include a non-accountable expense allowance equal to \$160,000 payable to MDB Capital Group LLC, the underwriter. See "Underwriting" for a description of compensation payable to the underwriter.

The underwriter also may purchase an additional 450,000 shares of our common stock amounting to 15% of the number of shares offered to the public, within 45 days of the date of this prospectus, to cover over-allotments, if any, on the same terms set forth above.

The underwriter expects to deliver the shares on or about _____, 2012.

MDB Capital Group LLC

The date of this prospectus is _____, 2012.

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

You should rely only on the information contained in this prospectus. We have not authorized anyone to provide you with additional or different information. The information contained in this prospectus is accurate only as of the date on the front cover of this prospectus, regardless of the time of delivery of this prospectus or of any sale of our common stock.

No dealer, salesperson or any other person is authorized in connection with this offering to give any information or make any representations about us, the securities offered hereby or any matter discussed in this prospectus, other than those contained in this prospectus and, if given or made, the information or representations must not be relied upon as having been authorized by us. This prospectus does not constitute an offer to sell or a solicitation of an offer to buy any security other than the securities offered by this prospectus, or an offer to sell or a solicitation of an offer to buy any securities by anyone in any circumstance in which the offer or solicitation is not authorized or is unlawful.

Prospectus Summary

This summary highlights selected information contained elsewhere in this prospectus and does not contain all the information that you need to consider in making your investment decision. You should carefully read this entire prospectus, as well as the information to which we refer you, before deciding whether to invest in our common stock. You should pay special attention to the “Risk Factors” section of this prospectus to determine whether an investment in our common stock is appropriate for you.

This registration statement, including the exhibits and schedules thereto, contains additional relevant information about us and our securities. With respect to the statements contained in this prospectus regarding the contents of any agreement or any other document, in each instance, the statement is qualified in all respects by the complete text of the agreement or document, a copy of which has been filed or incorporated by reference as an exhibit to the registration statement.

About ClearSign Combustion Corporation

We are a development stage company. We design and develop technologies that aim to improve key performance characteristics of combustion systems including energy efficiency, emissions control, fuel flexibility and overall cost effectiveness. Our Electrodynamic Combustion Control™ (ECC™) technology introduces a computer-controlled electric field into the combustion zone to improve control of flame shape and heat transfer. This same technique can also be used to optimize the complex chemical reactions that occur during combustion in order to minimize harmful emissions while maximizing system efficiency.

We have designed and built 3 prototypes. We have not yet developed products using our technology or applied our technology to existing products. Based on our research and testing, we believe that our technology can be applied at any scale and that the potential cost savings and economic benefits to owners and operators of large-scale combustion systems, in particular, such as those used to provide heat for industrial processes or to generate electric power, could be considerable. We believe that our technology would allow owners and operators of such systems to benefit from substantially reduced costs associated with the construction (including refurbishment and upgrade), operation and maintenance of these systems, as compared to combustion systems that use currently available technology. We believe that our technology may also substantially reduce the cost of compliance with air quality regulations as compared to the current generation of air pollution control (APC) technologies. Our Electrodynamic Combustion Control™ technology is, to our knowledge, the only combustion technology that exists today that has the promise to simultaneously improve emissions control performance and meet regulatory standards, while yielding a significant *increase* in energy efficiency. We believe our technology can be adapted to various fuel types and multiple system sizes and configurations, and can be deployed on both a retrofit and new-build basis.

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.clearsigncombustion.com. The information contained on or that may be obtained from our website is not, and shall not be deemed to be, a part of this prospectus.

The Industry

Nearly two-thirds of the world's total energy consumption is accounted for by combustion of hydrocarbon and other fuels in boilers, furnaces, kilns and turbines. These are used to generate electrical power, to provide heat for all manner of industrial processes and for building heat and they consume and produce more than 50 quadrillion British thermal units (Btus) of energy annually in the U.S. In order to maximize energy efficiency while keeping pace with regulatory guidelines for air pollution emissions, operators of these systems are continually installing, maintaining and upgrading a variety of costly process control, air pollution control and monitoring systems. In its December 2010 [Air Pollution Management Report](#), The McIlvaine Company projected that just under \$42 billion will be invested globally in equipment to reduce air pollution in 2011. In its August 2011 report, The McIlvaine Company further projected this market will grow at an average rate of 6% per year over the next decade.

Our Proprietary Technology

Overview. While we have not deployed our technology commercially, if the results we have observed in our testing can be replicated on a commercial scale, we believe our proprietary technology platform may increase energy efficiency and improve fuel flexibility and environmental performance for most types of industrial and commercial combustion systems. We believe our technology will compare favorably with current industry-standard air pollution control and efficiency technologies, including electrostatic precipitators, fabric filters, selective catalytic reduction devices, low- and ultra-low NOx burners, excess air systems and other such technologies. These systems account for the majority of energy utilization worldwide, and include those used in:

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

Technical requirements. Our technology consists, in its simplest form, of four major components: (a) a computer, (b) software delivering proprietary algorithms to (c) a power amplifier (resident outside the combustion chamber) and (d) electrode(s) (inside the combustion chamber). The electrodes are designed to best suit the specific geometry of a given installation. Because the system's basic components are available 'off the shelf', or require manufacturing techniques that are well within the current state of the art, ClearSign does not depend on any third-party external technology that has not yet been developed.

ClearSign's Electrodynamic Combustion Control™ technology makes use of computer-controlled high-voltage electric fields to manipulate the movement of electrically charged molecules (ions) that are a natural product of the combustion process. The pulsed field creates very powerful electrostatic forces (body forces) within the flame and the surrounding gas cloud. These forces can be manipulated to precisely control flame shape and the transfer of heat to, through, or away from a surface as desired. Because we can selectively target and mobilize specific charged molecules, our technology provides an unprecedented level of precision for optimizing combustion chemistry to suppress formation of pollutants at the flame source.

This approach enables multiple effects to be applied individually or in combination, including the following:

- Better combustion* – less unburned fuel and better fuel/air mixing increases efficiency and reduces pollutant formation.
- Superior flame quality* – optimizes flame shape and flame stability to maximize energy efficiency.
- Precision control of heat transfer* – increases thermal efficiency and therefore, fuel efficiency.
- Control over combustion reaction chemistry* – enables control over flame chemistry, which can selectively promote, suppress, retard or accelerate chemical reactions as desired to minimize formation of pollutants and enhance

pollution abatement.

Agglomeration of particulate – particulate matter in exhaust is formed into large, more easily removed clusters, which are much more efficiently removed compared to particulate generated by existing technologies.

The gain in energy efficiency provided by our technology in boilers, kilns, furnaces and turbines stems in part from our ability to precisely control the flow of hot gases within a gas volume. In most cases, efficiency is increased by increasing heat flux onto targeted surfaces and reducing heat loss from other surfaces. Additionally, because the formation of pollutants is greatly reduced at the source, the ‘load’ placed on downstream pollution control equipment is also reduced, lowering both capital and operating expense and yielding a positive return on investment for system operators.

Intellectual Property. Our background research has not identified any public information, such as patents or published articles, relating to our technology that would affect our freedom to operate. To date, ClearSign has conceived and recorded, and is diligently working toward filing patent applications on or constructing more than 100 inventions that we believe represent proprietary, patentable subject matter. To date, we have filed 13 patent applications and plan to prepare and file more. See “Intellectual Property Protection” for additional information. We primarily rely on a combination of patent laws, confidentiality procedures and contractual restrictions with our employees and others to establish and protect our intellectual property rights. However, the steps we take to protect our intellectual property rights may be inadequate or we may be unable to secure patents and intellectual property protection for all of our technology. Moreover, others may independently develop technologies that are competitive with ours or infringe our intellectual property. Our success and ability to compete will depend, in large part, upon our intellectual property and our ability to protect it.

Prototypes and Our Experimental Data. We have designed and built 3 prototype systems: a small “bench-top” configuration of 5,000 Btu/hour, a larger system of 25,000 Btu/hour and a scale reactor of 250,000 to 1,000,000 Btu/hour to demonstrate our technology with both pre-mixed and diffusion flames. This reactor can accommodate a variety of fuel types and can be up-, down-, or side-fired. We have conducted over 400 experiments using a variety of analytical and measurement tools. Examples of the analytical equipment used in our tests include calorimetry to record data relating to heat transfer, thermocouple arrays to map heat distribution, EPA-certified methods and NBS-certified calibration gases to measure pollutant formation, videography, and visible and Schlieren photography to measure flame shape. Our technology's ability to control and improve both flame chemistry and heat transfer in configurations for multiple fuels suggests a wide range of potential commercial scale applications.

Our tests with coal, tire-derived-fuel (TDF) and wood have shown reductions in visible particulate matter (PM) of over 80% (using EPA test Method 9, a measure of visible opacity at timed intervals), with significant, simultaneous reductions in carbon monoxide (CO) and exit gas temperature (indicative of superior heat transfer to the process). In testing we have achieved such reductions in unburned carbon, CO, and particulates without increased NO_x emissions. We have also demonstrated the ability to selectively and precisely control flame shape, heat transfer and heat distribution.

Our experiments and designs also suggest improvements in flame stability and that our technology could be retrofitted to or even replace Low and Ultra-Low NO_x burners. We believe this may result in potential efficiency increases in the range of 20% to 30% for a large number of industrial gas-fired boilers.

Our technology has not been tested or verified by any independent third party.

Key technical challenges. As with any new industrial technology, scaling our technology from lab prototype to a field-operating unit will require deliberate staging from the initial retrofit installation of systems of a “meaningful but manageable” scale, to progressively larger and more complex systems. We are currently beginning testing a system

with a 1,000,000 Btu/hr burner, which is similar in size to the wall-fired burners used in some configurations of steam methane reformers (SMR) used in the production of hydrogen. Because of the large numbers, wide variety and varying capacities of combustion systems, we believe we will be able to identify and target progressively larger systems without requiring significant 'step-function' increases in scale.

The Combustion Markets

Overview . We believe that both the industrial combustion and power generation segments offer enormous opportunity for us. In its December 2010 [Air Pollution Management Report](#), The McIlvaine Company projected that just under \$42 billion will be invested globally in equipment to reduce air pollution in 2011. Based on our own internal estimates, we believe the total addressable market for ClearSign ECC is between \$5.1 billion and \$12.2 billion in the United States alone. Each segment, however, has significantly different design-build and sales cycles. The power generation opportunity is characterized by large individual installations (ranging into the billions of dollars), with longer times to revenue. Industrial combustion systems are generally smaller, much more numerous, and tend to be represented by a manageable number of design variations. For this reason, we intend to target the retrofit of industrial combustion systems as an early market entry point, using techniques developed from these early installations to inform the design of systems for larger utility boilers.

Partnership Strategy. We intend to form research and development partnerships in order to further develop and commercialize our technology. While we have commenced seeking such partners and have engaged in discussions with several companies and personnel with certain government agencies, we have not yet entered into any definitive partnership or sponsorship agreements. Among the types of partners ClearSign will seek to establish relationships with are:

- Industry research groups, whose mission is the development and testing of new technologies for the eventual benefit of their member companies;
- Government entities such as the U.S. Department of Energy, that are chartered with the development of longer-range and potentially disruptive energy technologies;
- Engineering and Construction (E&C) companies interested in differentiating their offerings while increasing profitability;
- Large OEMs interested in ClearSign's technology

ClearSign plans to initially market solutions that will enable cost-effective retrofitting of our technology onto existing, standard system designs to simultaneously improve both their energy efficiency and pollution control characteristics. ClearSign also believes that, as a next-stage development effort, our technology will form the basis of completely redesigned, next-generation combustion systems with disruptive performance characteristics, offering benefits to operators which are not possible using conventional system designs.

We believe that our Electrodynamic Combustion Control™ technology has the potential to transform industries that rely upon combustion, and is broadly applicable in large, scalable, global markets.

Going Concern

Our independent registered public accounting firm has issued an unqualified opinion with an explanatory paragraph to the effect that there is substantial doubt about our ability to continue as a going concern. This unqualified opinion with an explanatory paragraph could have a material adverse effect on our business, financial condition, results of operations and cash flows. See "Management's Discussion and Analysis of Financial Condition and Results of Operations - Liquidity and Capital Resources" and Note 2 to our financial statements included elsewhere in this prospectus.

We experienced net losses of \$2,976,295 and \$395,587 for the years ended December 31, 2011 and 2010, respectively. As of December 31, 2011, our accumulated deficit was \$4,490,238.

We have no committed sources of capital and do not know whether additional financing will be available when needed on terms that are acceptable, if at all. This going concern statement from our independent registered public accounting firm may discourage some investors from purchasing our stock or from providing alternative capital financing to us. The failure to satisfy our capital requirements will adversely affect our business, financial condition, results of operations and prospects.

Unless we raise additional funds, either through the sale of equity securities or one or more collaborative arrangements, we will not have sufficient funds to continue operations. Even if we take these actions, they may be insufficient, particularly if our costs are higher than projected or unforeseen expenses arise.

Risks Related to Our Business

Our business is subject to a number of risks. You should understand these risks before making an investment decision. If any of these risks actually occurs, our business, financial condition or results of operations would likely be materially adversely affected. In such case, the trading price of our common stock would likely decline, and you may lose all or part of your investment. Below is a summary of some of the principal risks we face. The risks are discussed more fully in the section of this prospectus below entitled "Risk Factors."

We are a development stage company with a limited operating history and it is uncertain whether we will ever be profitable. We anticipate future losses and negative cash flow, which may limit or delay our ability to become profitable.

We may 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.

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 materials.

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

Our efforts may never demonstrate the feasibility of our technology.

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

We may be unable to protect our intellectual property.

Stock Split

On December 21, 2011 our board of directors, pursuant to the authority granted by Section 23B.10.020 of the Washington Business Corporation Act, approved a 1.25-for-1 split of our common stock and an increase to our authorized shares of common stock from 50,000,000 shares to 62,500,000 shares. The stock split and the increase to the authorized shares were effective on December 22, 2011, the date that the Articles of Amendment to our Articles of Incorporation were filed with the Secretary of State of the State of Washington. All of the information in this prospectus reflects the stock split.

THE OFFERING

The following summary contains basic information about our initial public offering and our common stock and is not intended to be complete. It does not contain all the information that may be important to you. For a more complete understanding of our common stock, please refer to the section of this prospectus entitled “Description of Capital Stock.”

Issuer	ClearSign Combustion Corporation, a Washington corporation.
Common stock offered by us	3,000,000 shares of common stock, par value \$0.0001 per share.
Over-allotment option	We have granted an option to our underwriter to purchase up to an additional 450,000 shares of common stock within 45 days of the date of this prospectus in order to cover over-allotments, if any.
Common stock outstanding prior to this offering	5,153,216 shares of common stock (1)
Common stock outstanding after this offering	8,153,216 shares of common stock (1)(2)
Use of Proceeds	We intend to use the net proceeds from our sale of common stock in this offering as follows: approximately \$5 million for research and development including capital expenditures, \$1 million for protection of intellectual property, \$1.25 million for exploration of market opportunities, and the balance for working capital and general corporate purposes. See “Use of Proceeds” and “Plan of Operation” in “Management’s Discussion and Analysis of Financial Condition and Results of Operations” for additional information.
Market and trading symbol for the common stock	There is currently no market for our common stock. We intend to apply for listing of our common stock on The Nasdaq Capital Market under the symbol “CLIR”.
Underwriter common stock purchase warrant	In connection with this offering, we have also agreed to sell to MDB Capital Group LLC and its designees a warrant to purchase up to 10% of the shares of common stock sold in this offering. If this warrant is exercised, each share may be purchased by MDB Capital Group LLC at \$_____ per share (125% of the price of the shares sold in this offering.)
Lock-Up Agreements	With the exception of the selling security holder, all of our current shareholders, including our officers and directors, are subject to lock-up agreements for periods that are no less than 180 days and no more than one year. The number of shares of common stock subject to a 180 day lock up period totals 1,743,151 shares and the number of shares of common stock subject to a

one year lock-up period, including all of the shares belonging to the selling security holder, totals 3,410,065 shares. If the selling security holder distributes its shares, only approximately 191,000 of the 454,545 shares it owns will be subject to the one year lock-up period. For more information about the lock-up agreements, see the section titled "Underwriting - Lock-Up Agreements" in this prospectus.

- (1) The number of shares of our common stock to be outstanding both before and after this offering is based on the number of shares outstanding as of December 31, 2011 and excludes:

· 359,375 shares of our common stock issuable upon exercise of stock options under our 2011 Equity Incentive Plan at a weighted average exercise price of \$2.20 per share;

· 216,368 shares of our common stock reserved for issuance under outstanding warrant agreements, at a weighted average exercise price of \$2.05 per share;

· 138,625 shares of our common stock reserved for future issuance under our 2011 Equity Incentive Plan; and

· the shares of our common stock issuable upon exercise of the warrant issued to MDB Capital Group LLC.

Unless otherwise specifically stated, information throughout this prospectus assumes that none of our outstanding options or warrants to purchase shares of our common stock are exercised.

- (2) Unless otherwise indicated, the number of shares of common stock presented in this prospectus excludes shares issuable pursuant to the exercise of the underwriter's over-allotment option.

Concurrent with this offering, the selling security holder may sell up to an aggregate of 454,545 shares of our common stock. Although a specific price cannot be determined at this time, we have estimated an initial price for the sale of these shares to be between \$[_____] and \$[_____]. If we are successful in listing our shares on The Nasdaq Capital Market, the selling security holder may sell at prevailing market prices or privately negotiated prices. We will not receive any of the proceeds from the sale of shares to be offered by the selling security holder.

SUMMARY SELECTED FINANCIAL INFORMATION

The table below includes historical selected financial data for each of the years ended December 31, 2011 and 2010, derived from our audited financial statements included elsewhere in this prospectus.

You should read the historical selected financial information presented below in conjunction with the “Management’s Discussion and Analysis of Financial Condition and Results of Operations” section and our financial statements and the notes to those financial statements included elsewhere in this prospectus. Historical results are not necessarily indicative of the results that may be expected for any future period.

	For the Years Ended December 31,	
	2011	2010
STATEMENT OF OPERATIONS:		
Operating Expenses		
Research and Development	\$ 463,076	\$ —
General and Administrative	2,516,384	395,587
Total Operating Expenses	2,979,460	395,587
Loss from Operations	(2,979,460)	(395,587)
Other Income (Expense)	3,165	—
Net Loss	\$ (2,976,295)	\$ (395,587)
Net Loss per common share, basic and diluted	\$ (0.67)	\$ (0.15)
Weighted average common shares outstanding, basic and diluted	4,435,763	2,580,885

	December 31,	
	2011	2010
STATEMENT OF FINANCIAL CONDITION:		
Working Capital	\$ 622,661	\$ (373,948)
Total Assets	1,636,155	100,522
Long Term Liabilities	17,475	—
Total Stockholders’ Equity (Deficit)	874,417	(316,806)

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 prospectus.

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 no 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, 2011, we had a total accumulated deficit of \$4,490,238. 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.

Our independent registered public accounting firm has issued an unqualified opinion with an explanatory paragraph to the effect that there is substantial doubt about our ability to continue as a going concern.

Our independent registered public accounting firm has issued an unqualified opinion with an explanatory paragraph to the effect that there is substantial doubt about our ability to continue as a going concern. This unqualified opinion with an explanatory paragraph could have a material adverse effect on our business, financial condition, results of operations and cash flows. See “Management’s Discussion and Analysis of Financial Condition and Results of Operations - Liquidity and Capital Resources” and Note 2 to our financial statements included elsewhere in this prospectus.

We have no committed sources of capital and do not know whether additional financing will be available when needed on terms that are acceptable, if at all. This going concern statement from our independent registered public accounting firm may discourage some investors from purchasing our stock or from providing alternative capital financing to us. The failure to satisfy our capital requirements will adversely affect our business, financial condition, results of operations and prospects.

Unless we raise additional funds, either through the sale of equity securities or one or more collaborative arrangements, we will not have sufficient funds to continue operations. Even if we take these actions, they may be insufficient, particularly if our costs are higher than projected or unforeseen expenses arise.

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.

Current worldwide economic conditions may adversely affect our business, operating results and financial condition.

The United States economy has recently experienced, and continues to experience, slower growth. Some financial and economic analysts predict that the world economy may be entering into a period of prolonged slow economic growth characterized by high unemployment, limited availability of credit, increased rates of default and bankruptcy, and decreased consumer and business spending. These developments, if they occur, could negatively affect our business, prospects, operating results and financial condition in a number of ways. For example, recent worldwide economic developments have had, and may continue to have, an adverse effect on the global credit markets. Credit has tightened significantly in the last several years, resulting 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 continue or 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.

Our brand name and technology may not achieve recognition in our market segment, and if this were to occur our results of operations and financial condition would suffer.

Our brand name and technology are new and unproven. If we are unable to effectively develop and timely promote our brand and 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 brand recognition and awareness over time, there cannot be assurance that awareness and recognition of our brand will develop in a manner or pace that is necessary for us to achieve profitability in the near term.

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.

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