

ENER-CORE, INC.

A New Force in Cleantech

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ENER-CORE, INC. (OTCQB - ENCR - \$0.76)

Price Target: \$3.00

Rating: Speculative Buy

COMPANY SNAPSHOT

Ener-Core, Inc. designs and manufactures innovative systems for producing continuous energy from a broad range of sources, including previously unusable ultra-low quality gas. The Ener-Core Gradual Oxidizer, its patented oxidation technology, enables the conversion of these gases into useful heat and power with the lowest known associated emissions. With the Ener-Core Gradual Oxidizer matched to gas turbines, Ener-Core offers systems with fuel flexibility and pollution control for power generation. The Gradual Oxidizer can also be customized for integration with larger existing power generation systems to offer unparalleled pollution control and achieve zero emissions.

KEY STATISTICS

Price as of 2/25/14	\$0.76
52 Week High – Low	\$2.37 – \$0.65
Est. Shares Outstanding	72.6M
Market Capitalization	\$55.2M
3 Mo Avg Vol	23,000
Exchange	OTC:QB

COMPANY INFORMATION

Ener-Core, Inc.
 9400 Toledo Way
 Irvine CA 92618
www.Ener-Core.com
 Phone : 949.646.3100

INVESTMENT HIGHLIGHTS

Leveraging its innovative, patented technology, Ener-Core is poised to emerge as a leading player in the multi-billion dollar cleantech industry. The Company is one of the few players in the segment that is able to produce continuous energy from unusable, low-quality gas, with the lowest rated emissions.

The primary application of the Company's Gradual Oxidizer technology is coupled with energy-producing gas turbines to transform harmful methane gas waste into usable electricity. This conversion is achieved with zero emissions for unparalleled pollution control. Plus, the Ener-Core technology can be applied to several markets including oil production, biogas, coal mines, natural gas, emission control, and utility power generation.

ENCR shipped its first commercial FP250 system in November 2013, which combines the Gradual Oxidizer technology with a 250 Kw gas turbine that was initially developed by Ingersoll-Rand.

The second product combines the Gradual Oxidizer technology with a two megawatt gas turbine, developed by Dresser-Rand (NYSE – DRC), and this product is part of a broad joint development project with Dresser-Rand. This offering will undergo field tests in 2014 and 2015, with commercial sales to occur thereafter.

Continued development progress and product deployment should drive this cleantech firm's shares higher and due to the technology's unique capabilities, it is possible that Ener-Core emerges as a takeover candidate. In the interim, existing product shipment and the Dresser-Rand partnership demonstrate tremendous validation for the technology and its revenue potential. We rate these shares Speculative Buy with a \$3.00 price target.



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COMPANY OVERVIEW

Ener-Core was founded in 2010 in Nevada and its operating subsidiary Ener-Core Power, Inc. was incorporated in the state of Delaware in 2012 under the name Flex Power Generation. Ener-Core Power became Ener-Core's subsidiary in July 2013 by merging with Flex Merger Acquisition Sub, Inc., a Delaware corporation wholly owned by Ener-Core. The Company is now headquartered in Irvine, CA.

Today, Ener-Core, Inc. designs and manufactures innovative systems for producing continuous energy from a broad range of sources, including previously unusable ultra-low quality gas. The Company's Gradual Oxidizer technology and its related products trace their initial development roots to 2008 when it operated under the FlexEnergy name. These efforts were enhanced through the acquisition of selected assets and liabilities of Ingersoll-Rand's (NYSE – IR) Energy Systems division, including the MT250 gas turbine and manufacturing facility in Portsmouth, New Hampshire.

The Ener-Core Gradual Oxidizer, the Company's patented oxidation technology, enables the conversion of these gases into useful heat and power with the lowest known associated emissions, which represents a multi-billion industry with many vertical market opportunities. With the Ener-Core Gradual Oxidizer matched to gas turbines, Ener-Core offers systems with fuel flexibility and pollution control for power generation. The primary application of the Gradual Oxidizer is coupled with energy-producing gas turbines to transform harmful methane gas waste into usable electricity. This conversion is achieved with zero emissions for unparalleled pollution control. The Ener-Core technology can be applied to several markets and industrial uses including oil production, biogas, coal mines, natural gas, emission control, and utility power generation.

After a few years of development and field tests, the Company shipped the first commercial FP250 system in November of 2013, which combines the Gradual Oxidizer technology with a 250 kilowatt gas turbine that was initially developed by Ingersoll-Rand and subsequently enhanced by FlexEnergy. It is anticipated that Ener-Core's second product, the Powerstation KG2-3G/GO will undergo field tests in 2014 and 2015, with commercial sales to occur thereafter. This product combines the Gradual Oxidizer technology with a two megawatt gas turbine, developed by Dresser-Rand (NYSE – DRC), and this product is part of a joint development project with the power generation products leader.

As part of the 2013 agreement, Dresser-Rand has agreed to sell Ener-Core gas turbines, as well as certain gas turbine parts. Additionally, Dresser-Rand has agreed to provide the Company with certain training to enable Ener-Core to resell its turbines, whether packaged into the Gradual Oxidizer products or modified or improved by through application of the Company's proprietary technologies. The arrangement entitles Ener-Core to sell the turbines with its designed, recuperated and oxidized products on a worldwide basis and on a stand-alone basis in North America, Europe, and Russia and the countries of the former Soviet Union. The agreement initially ends on December 31, 2021, and provides for automatic renewals for additional two-year terms.



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In our view, the joint development relationship with Dresser Rand is a clear validation of the Company's technology and prospects and also enhances Ener-Core's ability to garner meaningful market share in this segment of the cleantech industry.

Ener-Core Technology Primer

The Ener-Core approach offers customers a unique value proposition, by allowing for the extraction of energy from previously unusable fuels, while significantly reducing harmful pollutants and creating heat and electricity. It should be noted that the Company's Gradual Oxidation technology completed a number of development and deployment milestones over the last several years, including testing and verification completed by Southern Research Institute ("SRI") as part of a U.S. Department of Defense ("DoD") demonstration program.

The Ener-Core Gradual Oxidizer is a patented innovation that can be used in a wide variety of applications over a large span of gases and fuel qualities. To understand how the product operates a definition and explanation of oxidation is needed. Oxidation is a chemical process where fuel reacts with oxygen. Oxidation can happen quickly or slowly. For example, vented methane oxidizes with atmospheric oxygen at very low concentrations. Over the course of years, methane oxidation eventually results in carbon dioxide and water.

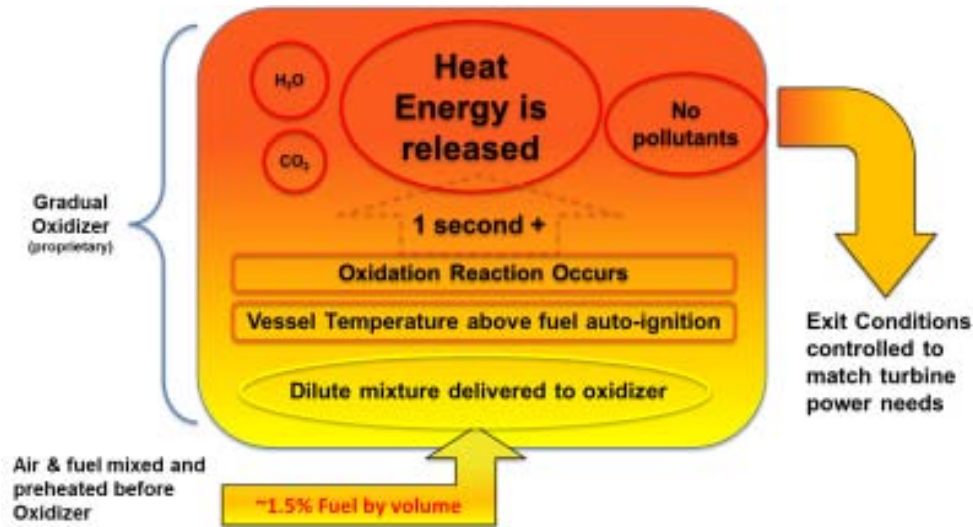
In most energy applications there is combustion, which is an extremely fast oxidation of fuel in highly concentrated localized area. The process produces pollutants such as NO_x (oxides of nitrogen) that are harmful to the atmosphere. The Ener-Core Gradual Oxidizer is designed to control oxidation so that the reaction can generate enough power to a gas turbine but emit the lowest possible pollutants. The Ener-Core Gradual Oxidizer is engineered to precisely control the gas feed rate to maintain temperature control needed to continuously power the gas turbine generator.

The Gradual Oxidizer works by replacing a combustion reaction with a chemically similar, but slower chemical oxidation reaction that occurs at lower temperatures than combustion. Two system configurations (low-quality fuels and ultra-low emissions) are offered, depending on specific customer needs. A low-quality fuels configuration is designed for customers intending to generate energy from low-quality fuels, including previously unusable gases – typically vented or flared. The ultra-low emissions configuration is designed for customers intending to meet emissions regulations in areas with significant air quality problems.

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Figure I: Ener-Core Gradual Oxidizer Process

Source: www.Ener-Core.com



Key Products

The Company's first commercial product, the Ener-Core Powerstation FP250, combines the Gradual Oxidizer technology with a 250 kilowatt gas turbine that was initially developed by Ingersoll-Rand and subsequently enhanced by FlexEnergy. Since the Gradual Oxidizer replaces a turbine's standard combustor, the FP250 can operate on a gaseous fuel that is much lower in quality, and with fewer emissions than a conventional turbine. After deployment of FP250 development and field test units in 2011-2012, Ener-Core shipped the first commercial FP250 system in November 2013.

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Image I. Ener-Core Powerstation FP250
Source: www.Ener-Core.com

Management projects that the Company's second commercial product will be the Ener-Core Powerstation KG2-3G/GO, which combines the Gradual Oxidizer technology with a two megawatt gas turbine, developed by Dresser-Rand and is part of a joint development project with Dresser-Rand. Ener-Core has completed system layout and analytic models integrating the Gradual Oxidizer with this turbine and has initiated design and development of the KG2-3G/GO. Field test units should be deployed sometime in late in 2014 or 2015 with initial commercial shipments to occur shortly thereafter.



Image II. Ener-Core Powerstation KG2-3G/GO
Source: www.Ener-Core.com

Going forward, management plans to develop additional commercial systems, integrating the Gradual Oxidizer with larger gas turbines

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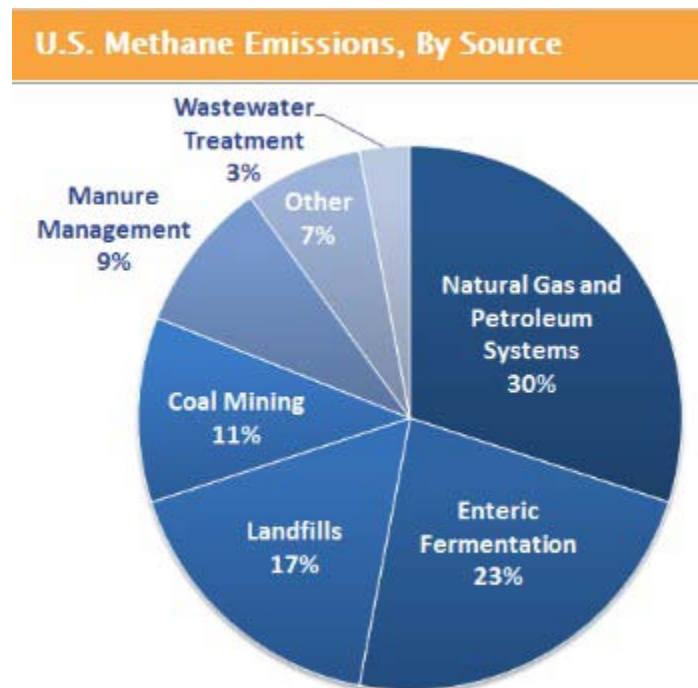
MARKET APPLICATIONS

The Ener-Core Gradual Oxidizer technology supports a multi-billion industry and is designed to operate on gas of a much lower quality than a typical turbine or engine and facilitates the generation of energy from these low quality previously waste gases that were vented or flared to the atmosphere. It is engineered to achieve the Lowest Achievable Emission Rate (LAER) for several major air pollutants including NOx (oxides of nitrogen), CO (carbon oxides), VOC (volatile organic compounds) and PM2.5 (Fine Particle under 2.5 micrometers as measured in the Air Quality Index). The Gradual Oxidation technology is designed to control the conversion of fuel gas to useful heat without the standard air pollution related to combustion. In the U.S., Europe, and Russia, the Ener-Core Gradual Oxidizer targets several markets as a result of regulatory compliance as well as the necessity to optimize efficiency and costs.

The Ener-Core Gradual Oxidizer is designed primarily for applications that convert harmful methane gas into usable electricity. According to the U.S. EPA, methane is the second most prevalent greenhouse gas emitted in the United States, accounting for nearly 10% of all domestic emissions from industrial and other human applications. The figure below breaks down the contribution of several industrial applications by their emission of methane gases.

Figure II: Methane Emissions in the U.S. By Source

(Source: EPA, Inventory of U.S. Greenhouse Gas Emissions and Sinks 1990-2011, 2012)



Additionally, the EPA estimates that globally over 60% of methane emissions come from human activities. Clearly, the conversion and elimination of this harmful greenhouse gas is a critical step in combating the degradation of the natural environment. The Ener-Core technology is designed for several of these methane

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conversion applications including landfills, coal and petroleum gas. The figure below provides a brief description of these applications.

Figure III: Ener-Core Gradual Oxidizer Markets/Applications

Source: www.Ener-Core.com

Market/Application	Environmental Issue/Regulatory Concern	Ener-Core Gradual Oxidizer Solution
LANDFILLS	Waste decomposition creates more man made methane than any other source. Venting regulations are getting stricter.	Methane gases can be turned into renewable energy
COAL MINES	Methane is a main waste bi-product of both live and abandoned coal mines. Regulations in U.S. have become ultra strict under the current administration.	Can generate energy from very low quality methane gases, even from abandoned mines
ASSOCIATED PETROLEUM GAS	Associated petroleum gas (APG), flare gas, or associated gas is released as a waste product from oil and gas drilling and production activity. This can be generated by pipelines, a major issue from environmentalists over the controversial XL Pipeline	Allows wasted fuel to be converted to energy to power remote locations where fuel had to be trucked in previously. Addresses environmental concern.
CLEAN POWER GENERATION	Gas turbines and other applications, utilities and natural gas cogeneration	Maximize energy generation, minimize wastes
AIR QUALITY MANAGEMENT DISTRICTS	Regulation over emissions and air quality in cities and manufacturing sites	Reduce emissions profiles, simplifying compliance and easing permitting in even the most stringent air quality regions.

THE ENER-CORE TEAM

Ener-Core investors can be comforted that the company is led by an impressive leadership team with nearly 150 years of combined experience in energy, power generation, technology, and finance.

Alain Castro – Chief Executive Officer

Mr. Castro brings a variety of experiences in developing, financing and building new power generation plants, as well as optimizing older energy infrastructure assets across many countries throughout Europe, Latin America and North America. Prior to joining the firm he was CEO of the North and South America divisions of Akuo Energy, a leading international developer and operator of renewable energy projects with over \$1 Billion in operational power plants. In addition, he founded International Energy Ventures in 2002, a private equity firm that specializes in fuel cells, batteries, and wind energy and biofuel investments. Mr. Castro received an Executive Master's Degree in Business and Management at the London Business School as a Sloan Fellow as well as a Bachelor of Science in Industrial and Mechanical Engineering from the University of Texas.

Michael Hammons – Chairman of the Board of Directors

Mr. Hammons has over 20 years of experience and senior leadership as a Partner at SAIL Capital Partners. He has both domestic and international experience in a variety of industries including telecommunications, energy, automotive, aerospace and defense, data storage, enterprise software, and electronic hardware. Prior



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to joining SAIL, he held leadership positions including CEO at Vigilistics, CEO at Nexiant, CEO at ARGO Tracker, VP of Global Operations at Cogent Communication, and Director of the South American Automotive Practice at Ernst & Young Consulting. Mr. Castro has received a Master's in Business Administration from the Harvard Business School and a Bachelor of Science degree in Industrial Engineering from California Polytechnic State University, San Luis Obispo.

Boris Maslov – President

Mr. Maslov has a long and prosperous career as a scientist and leader. Prior to joining Ener-Core he was the Vice President of Corporate Development at FlexEnergy where he led Strategic Planning, Technology Development, and Intellectual Property Protection. He has served as CEO of several technology and financial firms including Energy One, a renewable energy project development company. Mr. Maslov spent his early career as a leading scientist in Moscow for several organizations including the Moscow Institute of Physics and Technology. He is a senior member of IEEE and holds more than 30 U.S. and international patents. Finally, he obtained a Ph.D. in Electrical Engineering, and Bachelor and Master of Science in Electrical Engineering and Computer Science from the Moscow Institute of Physics and Technology.

Kelly Anderson – Chief Financial Officer

Ms. Anderson is a Certified Public Accountant with over 15 years of experience in corporate finance, accounting and senior management in roles at Fortune 500 companies to small start-up venture firms. Prior to joining Ener-Core she was President and Chief Financial Officer of T3 Motion, Inc., an electric vehicle technology company. She has experience in financial leadership in real estate investment, credit reporting and insurance as well. Ms. Anderson received a Bachelor of Arts in Business and Economics from California State University, Fullerton.

Douglas Hamrin – Vice President, Thermal Oxidizer Engineering

Mr. Hamrin has over 20 years of experience in turbine energy, fuel systems, and powertrain development and technology leadership. Prior to joining Ener-Core he held positions as Technical Manager, Applications for Honeywell Turbo Technologies, the Director of Fuel Systems at Capstone Turbine Corporation, and Engineering at Generals Motors Powertrain Division. He has filed over 17 patents over the past four years in developing the Ener-Core technology. Mr. Hamrin has a Master of Science in Mechanical Engineering from the Massachusetts Institute of Technology and a Bachelor of Science in Mechanical Engineering from Illinois Institute of Technology.

Steve Lampe – Vice President, Electrical and Controls Engineering

Steve brings a wealth of experience in gas turbine technology and controls to the Company. He was formerly the Director of Oil and Gas Applications for Capstone Turbine Corporation where he filed and holds 14 patents. He has filed for 9 patents during his four year stint at Ener-Core. Mr. Lampe received a Master of Science in



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Mechanical Engineering from the University of Missouri, Rolla.

Mike Levin – Vice President, Legal and Regulatory Affairs

Mr. Levin is a seasoned professional attorney with experience assisting clients in regulatory compliance, project development, and government advocacy. Prior to joining the Company he served as an attorney at Bryan Cave LLP, focusing his practice on government affairs and environmental law. He currently serves on the boards of the California Center for Sustainable Energy, a leading clean energy non-profit, as well as CleanTech OC, a non-profit trade association, which he also co-founded and served as executive director. Mr. Levin obtained a Juris Doctorate from Duke University and a Bachelor of Arts in Political Science from Stanford University.

Paul Fukumoto – Director, Business Development

Mr. Fukumoto has extensive experience in developing energy projects and deploying turbine technologies from previous managerial positions at Ingersoll Rand Energy Systems Division, Honeywell Power Systems, and Honeywell Aerospace. He previously served as Director of Programs for FlexEnergy, where he was responsible for Product Applications, Market Research, and Strategic Planning. Mr. Fukumoto has a Master of Science in Engineering Physics and a Bachelor of Science in Engineering Sciences from the University of California, San Diego.

RISK FACTORS

In our view, the biggest factors in impeding Ener-Core's success are related to potential development or field test delays, which are not uncommon in this segment. Separately, revenue generated through the Dresser-Rand relationship may not prove to be as valuable as first anticipated. It is likely, however, that the Company may require additional financing related to product development and any financing delays or unfavorable terms could also prove to be a potential risk for the Company. Although competition from larger firms or even from newer entrants with similar approaches could become serious threats, the lead time it has versus others plus its existing patent portfolio should largely insulate Ener-Core from its rivals.

CONCLUSION

Leveraging its innovative, patented technology, Ener-Core is poised to emerge as a leading player in the multi-billion dollar cleantech industry. The Company is one of the few players in the segment that is able to produce continuous energy from unusable, low-quality gas, with the lowest rated emissions. The primary application of the Company's Gradual Oxidizer technology is coupled with energy-producing gas turbines to transform harmful methane gas waste into usable electricity. This conversion is achieved with zero emissions for unparalleled pollution control. Plus, the Ener-Core technology can be applied to several markets including oil production, biogas, coal mines, natural gas, emission control, and utility power generation.



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In our view, current product deployment and the broad, joint development relationship with Dresser Rand are clear validations of the Company's technology and also enhance Ener-Core's ability to garner meaningful market share in this segment of the cleantech industry. Furthermore, as continued development progress and product deployment occur, shares of this cleantech firm should be driven higher. Moreover, due to the technology's unique capabilities, it is possible that Ener-Core emerges as a takeover candidate in conjunction with broader deployment. We rate these shares Speculative Buy with a \$3.00 price target.

Recent Trading History For ENCR

(Source: Stockta.com)





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Senior Analyst: Robert Goldman

Rob Goldman founded Goldman Small Cap Research in 2009 and has over 20 years of investment and company research experience as a senior research analyst and as a portfolio and mutual fund manager. During his tenure as a sell side analyst, Rob was a senior member of Piper Jaffray's Technology and Communications teams. Prior to joining Piper, Rob led Josephthal & Co.'s Washington-based Emerging Growth Research Group. In addition to his sell-side experience Rob served as Chief Investment Officer of a boutique investment management firm and Blue and White Investment Management, where he managed Small Cap Growth portfolios and *The Blue and White Fund*.

Analyst Certification

I, Robert Goldman, hereby certify that the view expressed in this research report accurately reflect my personal views about the subject securities and issuers. I also certify that no part of my compensation was, is, or will be, directly or indirectly, related to the recommendations or views expressed in this research report.

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