

# **COMPOSITE EXHIBIT 29**

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**From:** Tom Darden <tdarden@industrialheat.co>  
**Sent:** Thursday, July 03, 2014 7:47 PM  
**To:** Craigq; JT Vaughn; John Mazzarino  
**Subject:** Re: Andrea

Was this the proposal to locate the device in FL? I've forgotten which email this is associated with.

One suggestion is let him know you do not really care one way or the other, and to point out that the plant is ours and it is up to us (I think this is correct, please speak up if this isn't right-- I haven't read the contracts about this).

I want to do all we can to help Andrea get the plant running and to have a good test, clearly, but I am very torn about the test being in FL. It is far away from the rest of the country, and it isn't a credible venue generally (Miami). I doubt we will have unrestricted access to the factory site all the time, which could be problematic. And, we don't care about the money they will pay us, relatively speaking.

OTOH, it will be convenient for Andrea, and our goal is to help him any way we can. And the company sounds pretty credible. So, broadly, we are confused about what to do. I think there is little if any gain in credibility from having the test in an independent factory compared to the company next door to us (which used to be owned by my wife's uncle, although he sold it years ago). Having it in a factory near Andrea probably harms credibility as much or more than having it near us. But obviously Andrea disagrees.

Please offer your insights. We all care about the same thing, having a credible test site and credible results.

Tom Darden  
919 522 4095 m

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**From:** Craigq  
**Sent:** Thursday, July 3, 2014 6:03 PM  
**To:** JT Vaughn; tdarden@industrialheat.co; John Mazzarino  
**Subject:** Fwd: Andrea

As you can see he wants me to answer Should we just keep ignoring or what should we say

Happy 4th  
Craig

Sent from my iPhone

Begin forwarded message:

**From:** "Andrea Rossi" <ar.123@mail.com>  
**Date:** July 3, 2014 at 5:45:47 PM EDT  
**To:** ccassarino@ampenergo.com, ccassarino@lti-global.com  
**Subject:** Andrea

Hi, Craig:

Can you answer to my email confirming Ampenergo agrees upon my proposal?

Warm Regards,

Andrea

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## CONFIDENTIAL MEMORANDUM

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### Industrial Heat, LLC IPH International B.V.

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July 2014

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This Confidential Memorandum (the “Memorandum”) is furnished on a confidential basis to a limited number of sophisticated investors for the purpose of providing certain information about an investment in IPH International B.V., a company organized under the laws of the Netherlands (“IPH”). IPH is currently a wholly-owned subsidiary of Industrial Heat, LLC, a company organized in the United States under the laws of Delaware (“Industrial Heat” or “IH”). IPH and IH (sometimes referred to herein collectively as the “Companies”) are currently developing a low energy nuclear reaction technology that is more particularly described in this Memorandum.

No offering of securities by IPH has been approved or disapproved by the securities regulatory authority of any country or other jurisdiction, including, without limitation, the United States Securities and Exchange Commission, nor has any such securities regulatory authority passed upon the accuracy or adequacy of this Memorandum. No securities of IPH will be registered under the securities laws of any country or any political subdivision thereof, nor is any such registration contemplated. Securities of IPH will be offered and sold only to sophisticated investors qualified to purchase such securities under available exemptions from applicable securities laws in the countries and jurisdictions where the offering will be made. There will be no public market for the securities of IPH and no such market is expected to develop in the future. The securities of IPH will be subject to substantial restrictions on transfer and may not be sold or transferred unless such securities are registered under the applicable securities laws of each relevant country or other jurisdiction or an exemption from such registration is available.

This Memorandum does not constitute an offer to sell or a solicitation of offers to buy securities of IPH. Any such sale of securities will be made only pursuant to such written definitive agreements as may be executed by IPH and an investor, and the investor may rely only upon such representations and warranties as may be made to it by IPH or any other party in any definitive agreement that may be executed in connection with a sale of securities of IPH. In making an investment decision, prospective investors must rely on their own examination of IPH and Industrial Heat, as applicable, and the terms applicable to their investment, including the merits and risks involved. Prospective investors should not construe the contents of this Memorandum as legal, tax, investment or accounting advice, and each prospective investor is urged to consult with its own advisers with respect to the legal, tax, regulatory, financial and accounting consequences of any investment in IPH. This Memorandum does not purport to contain all of the information that a prospective investor may wish to evaluate in connection with such an investment.

Industrial Heat and IPH each reserves the right to provide copies of this Memorandum to such prospective investors as they shall deem appropriate and to negotiate with, or enter into definitive agreements for the sale of securities to, one or more investors or prospective investors as IPH shall deem appropriate, without prior notice to any other recipient of information or any other person. IPH and Industrial Heat each reserves the right to terminate, at any time, discussions with any other person or further participation by any other person in a review and evaluation of the Companies in connection with a proposed investment or other transaction.

The information contained in this Memorandum is furnished solely for use in connection with the consideration of a possible investment in IPH or another business transaction with IPH or Industrial Heat. Such information should be treated in a confidential manner and may not be reproduced or used in whole or in part for any purpose other than consideration of such investment or other potential transaction, nor may it be disclosed to third parties, other than employees, agents and legal and accounting advisors and other representatives of the recipient of this Memorandum who need to know such information in connection with the evaluation of a possible investment or other transaction with IPH or Industrial Heat, provided that each such person is advised of the confidential nature of the contents hereof and agrees to treat the information contained herein as confidential. Each prospective investor who accepts this Memorandum agrees by such acceptance to return it to IPH or Industrial Heat promptly upon a request for such return.

Statements contained in this Memorandum (including those relating to current and future market conditions and trends in respect thereof) that are not historical facts are based on current expectations, estimates, projections, opinions and/or beliefs of the Companies. Such statements involve known and unknown risks, uncertainties and other factors, and undue reliance should not be placed thereon. Certain information contained in this Memorandum constitutes "forward-looking statements," which can be identified by the use of forward-looking terminology such as "may," "can," "will," "would," "should," "seek," "expect," "anticipate," "project," "estimate," "intend," "continue," "target," "believe," or the negatives thereof or other variations thereon or comparable terminology. Due to the various risks and uncertainties associated with an investment in IPH, actual events or results, actual market conditions or the actual performance of IPH or Industrial Heat may differ materially from those reflected or contemplated in any such forward-looking statements.

An investment in IPH is suitable only for sophisticated investors and requires the financial ability and willingness to accept the extremely high risks and lack of liquidity inherent in an investment in IPH, including the risk of potential loss of the full investment. Investors in IPH must be prepared to bear such risks for an extended period of time. No assurance can be given that IPH will be able to implement its strategy or achieve its objectives. Each prospective investor must conduct such due diligence as the investor may deem appropriate to investigate the technology, business, resources and prospects of IPH and Industrial Heat. Some, but not all, of the risks of an investment in the Company are set forth in Section IV of this Memorandum and should be carefully evaluated before making an investment in IPH or entering into any other transaction with IPH or Industrial Heat.

All inquiries and requests for further information concerning IPH or Industrial Heat or a potential investment or other transaction with either of the Companies should be directed as follows:

Attention: Tom Darden  
111 East Hargett Street, Suite 300  
Raleigh, North Carolina 27601  
Phone: 919-743-2506  
Fax: 919-743-2502  
Email: [tdarden@industrialheat.co](mailto:tdarden@industrialheat.co)

## Table of Contents

	<u>Page</u>
I. Executive Summary .....	1
II. Industrial Heat Business Overview .....	2
A. History .....	2
B. E-Cat Independent Test Results .....	6
C. E-Cat Licensing Agreement Overview .....	6
D. Industrial Heat Intellectual Property .....	8
E. LENR Sector Strategy .....	9
F. Market for Heat and Electricity .....	11
III. Use of Funds .....	13
IV. Risk Factors .....	14
V. Exhibits .....	19
A. Published report concerning December 2012 and March 2013 test of E-Cat reactor: <i>“Indication of anomalous heat energy production in a reactor device containing         hydrogen loaded nickel powder.”</i>	
B. Preliminary draft report concerning March 2014 test of E-Cat reactor: <i>“Report on the         Lugano Test—Preliminary Draft”</i>	
C. Industrial Heat LENR Contacts	
D. E-Cat licensing agreement:	
○ “License Agreement” between Industrial Heat, Andrea Rossi/Leonardo Corporation and AmpEnerg, Inc., including amendment and assignment.	
○ “Contribution Agreement” between Industrial Heat and AmpEnerg, Inc., including amendment and Letter Agreement.	
E. Intellectual property filed by Industrial Heat	

F. Report by Engineer Fabio Penon on the May 2013 Ferrara test

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## I. EXECUTIVE SUMMARY

The investment opportunity described in this Memorandum has the potential for substantial environmental and economic impact. Because the merits of this investment are generally apparent, prospective investors should focus primarily on downside risks. Therefore, please begin by reading the entire Risk Factors section (Section IV).

**Industrial Heat Business Overview:** Industrial Heat (“IH”) is focused on identifying and developing promising low energy nuclear reaction (“LENR”) technologies and working with leading industrial partners to commercialize these technologies. Industrial Heat has made an initial investment in what appears to be one of the most promising LENR technologies, the E-Cat developed by Andrea Rossi. In addition, IH has cultivated relationships with a number of other promising LENR inventors, and also plans to invest in and support these inventors as they work to develop further their inventions.

**Use of Funds:** IH, through its subsidiary, IPH, is undertaking to raise \$50 million currently, as part of a planned \$200 million capitalization. This will cover operational, R&D and investment expenses over the next 12-18 months, and will provide funds to return capital to the initial IH seed investors. In addition, IH will use a portion of this capital to retain consulting and investment banking firms to provide strategy and capitalization advice.

**Risk Factors:** Investing in Industrial Heat entails investing in a sector with many unproven technologies. IH also faces the normal risks associated with introducing a new technology into a mature market. **Any investment in Industrial Heat should be considered highly speculative and subject to substantial risk of loss.** Prospective investors should read in detail the Risk Factors section at the end of this Memorandum.

**Reorganization:** Industrial Heat and IPH are currently operating in a parent-subsidary structure, with Industrial Heat existing under United States (Delaware) law as the parent entity of IPH, with IPH being organized as a Dutch entity. Prior to closing of an additional investment in IPH, the Companies intend to consummate a reorganization pursuant to which such parent-subsidary structure will be collapsed, with IPH, organized under Dutch law, being the surviving and continuing entity. Following this reorganization, the business operations of IPH and Industrial Heat will be conducted going forward through a structure whereby IPH will be the primary entity for intellectual property holdings, with subsidiaries in the United States and other foreign jurisdictions to be organized and utilized as required to carry out research and development and sales and marketing activities in those jurisdictions where IPH elects to do business. Prospective investors should consider an investment in IPH in light of this expected operating structure. References herein to “Industrial Heat” or “IH” should be construed to mean the surviving entity in the contemplated combination and reorganization, and, with respect to periods prior to such reorganization, such references should also be construed to include IPH as Industrial Heat’s wholly-owned subsidiary, in each case as the context may require.

**Exhibits:** All exhibits should be reviewed in detail. Exhibits include: the E-Cat independent test reports, Industrial Heat LENR Contacts, the E-Cat licensing agreement and a list of intellectual property filed by Industrial Heat.

## **II. INDUSTRIAL HEAT BUSINESS OVERVIEW**

### ***A. History***

Industrial Heat was formed by a group of individual investors in the fall of 2012 to support and invest in LENR technologies, beginning with the E-Cat developed by Andrea Rossi of Leonardo Corporation (“Leonardo”). If proven reliable and controllable, LENR technologies will be highly important because they provide significant energy density without using radioactive material or generating radioactive waste, and they emit no carbon dioxide or other pollutants.

The founders of Industrial Heat have a long background investing together in early-stage companies, many in the environmental sector. Thomas F. Darden left Bain and Company in 1983 to acquire a North Carolina business using fossil fuel energy and converted it to biomass energy. He joined Joseph D. Pike in the purchase of a medical product business in 1986, leading to a continuous business relationship where each invested in and helped manage the other’s environmental or medical companies. Pike moved to San Diego in 1991, which became the focus of the medical activity. John A. Mazzarino left Bain and Company in 1989 to work with Darden in North Carolina, as they increased their focus on investing in businesses affected by environmental policy or environmental objectives. Since the initial investment, these three individuals have started or invested in well over 100 separate private transactions, the majority being early stage venture or startup deals.

Darden and Mazzarino, often assisted by Pike’s capital and relationships, invested in or founded many environmentally-related companies. A small subset include: Biosystems Technology, using bacteria for waste remediation, with professors from Virginia Polytechnic University; Cherokee Environmental Group, using multiple technologies for cleaning up contaminated soil; Cherokee Environmental Risk Management, providing insurance for environmental contamination; Brownfield Revitalization, LLC, allocating New Markets Tax Credits to encourage development on brownfield sites located in low income areas; Eco-Site, building cell towers on urban brownfield sites; Power Generation Services, Inc., “(PGSI)” providing smart grid services; and BaseTrace, using DNA fragments to identify specific sources of fracking fluid, radioactive water or other liquid contaminants to be sure they do not leak. Darden was awarded a U.S. patent in 2014 for the technology used by PGSI for controlling broadly-distributed sources of power on electrical grids, and he was nominated for the Zayed Future Energy Prize in 2012.

In 2012, Darden was approached separately by three different LENR groups, including Brillouin, Star from Australia and AmpEnergo, who were Rossi’s early supporters. He met with them and began following the industry, which he previously had assumed was not viable after the well-publicized Pons and Fleischman claims in 1988. Darden also met with Tri-Alpha in California and with Brian Scanlan in Connecticut. He offered to help all of them, providing advice and contacts, introducing them to many angel investors and environmental NGO leaders. In a meeting with Rossi in 2012, prior to Darden or any of his colleagues having any involvement in Rossi’s business or technology, Rossi abruptly said he wanted to create a relationship where he would be the inventor and Darden’s group would be the management team.

Industrial Heat, LLC was created as a Delaware limited liability company in October 2012, to focus primarily on Rossi’s technology, but also to approach other inventors. JT Vaughn became the manager, with substantial involvement by Darden and management oversight by Mazzarino and Pike.

Thomas Barker Dameron, a retired GlaxoSmithKline engineer and energy specialist, began managing the technical support for Rossi as well as the technology assessment and verification process, focusing on energy measurement and test protocols for the performance tests IH used in making the initial investment decision. Others supporting Industrial Heat include the accounting and finance team at Cherokee Investment Services, LLC; corporate counsel (Schell Bray PLLC and Weidema von Tol); patent counsel (Myers Bigel Sibley & Sajovek); tax consultants and accountants; and intellectual property consultants (Deep River Ventures, LLC).

Industrial Heat, LLC was organized in the U.S. as a Delaware company in anticipation of IH being a globally focused business with international investors and subsidiaries. Management decided early on to set up a Dutch subsidiary, IPH International B.V. to own all IH intellectual property. The Netherlands was selected as the home jurisdiction for this subsidiary based on a variety of tax, legal and regulatory issues that were considered by management at that time. As previously noted, management now anticipates a reorganization in which the parent-subsidary structure will be collapsed and the Dutch entity, IPH International B.V. will be the surviving and continuing entity. All existing investors in Industrial Heat, LLC will be transferred to IPH International B.V. and new investors will purchase stock or other securities in IPH International B.V. (Dutch) as opposed to Industrial Heat, LLC (U.S.).

Rossi has a history of failed business relationships and conflicts, and he is difficult to communicate and work with. However, he appeared to have a remarkable technology, so the principals of IH were willing to invest a great deal of time and to be more tolerant of eccentric or difficult interpersonal characteristics than one normally would, or than Rossi had experienced with others in his prior business relationships. This led to an unusual but relatively attractive business structure. IH took excessive risk with relatively small amounts of capital up front, but no large payments would be owed unless the technology proved to be extremely successful. Furthermore, IH is not obligated to pay any future royalties, and the Company owns all of the equity, i.e. this was not structured as an investment into an entity that Rossi owns part of or controls, as is often the case with early stage deals.

IH paid Rossi \$1.5 million in advance, to buy a 1 MW plant that he had begun to build but had not finished or tested. Rossi would have been obligated to return the funds if the machine had failed to meet its performance requirements, but collecting on this obligation would have been unlikely in that event. He used these funds for the plant but also to satisfy other unrelated financial obligations, which clearly were distracting him. IH agreed to pay him an additional \$10 million for the technology rights in IH's markets—representing 57% of world energy demand—if the plant could pass a 24 hour test at a Coefficient of Production ("COP"), which is the ratio of energy produced versus energy input, of 4 or better.

IH hired a consultant, Fabio Penon, who also does consulting work for Bureau Veritas in Italy, to certify the test results for the 1 MW plant and to be responsible for the measurement of energy input and output. The test was performed on April 30, 2013, and the calculated COP was 10.85. Rossi requested that he be able to operate only 18 of the 107 reactors in the 1 MW plant, because he said he could not get local permits to operate a generator with enough output to run the whole machine. IH agreed, because success with 18 reactors seemed to be sufficient. IH personnel filmed the entire test and collected data to confirm the measurements. While there is always uncertainty about any single test because of questions about measurement, the results of the 24 hour test broadly were compelling. Rossi also operated several

other reactors after the test ended, for shorter periods of time, with good results. The Penon test report is attached as Exhibit F.

When JT Vaughn arrived in Ferrara for the April test, Rossi gave him a draft of an article by a group of professors who performed two prior tests on high-temperature E-Cats which were very different from the steam reactors in the 1 MW plant. Rossi had mentioned the tests previously, and he indicated the results were likely to be good, although he did not have the actual data. The article described a December 2012 test in Bologna, Italy and a March 2013 test in Ferrara, Italy, using devices capable of achieving temperatures over 700 degrees Celsius, which is much higher than the older technology 1 MW plant. The report by the professors, attached here as Exhibit A, increased the IH management team's confidence in the technology and willingness to accommodate Rossi's request to operate only 18 reactors for the test.

After the test, Rossi closed his operation in Italy and moved permanently to Florida, where he had been spending half his time before. He shipped the 1 MW plant and all the contents of his Ferrara facility to a laboratory facility IH established near Research Triangle Park in North Carolina. Most of the equipment was in North Carolina by August 2013. Immediately, he began a testing and development process intended to create a new type of reactor that would be operated for a minimum one month test, overseen by the same group of professors who managed the December 2012 and March 2013 tests. This test, to be sponsored by the Swedish Royal Academy of sciences, was planned for December 2013, either in Europe or in the IH facility in North Carolina.

For four months ending in December 2013, IH personnel built perhaps 20 different reactors to Rossi's specifications, each with a different design. He operated each one to the point of destruction, usually due to electrical failures, although sometimes due to melting of the containment cylinders. The devices never showed evidence of significant radiation, as measured by Geiger counters and neutron detectors, while they operated or after they failed. While some reactors appeared to produce excess energy, others did not, and in any event IH was not sufficiently confident of its ability to measure energy output to form conclusions about reactor performance. Rossi was extremely confident throughout, and he did not seem to care about absolute energy measurement, but only relative performance of one design compared to another. Rossi's thermal measurement methods could determine whether one device outperformed another (as long as both were made of the same material), so he could tell if he was making progress even if one could not measure the COP of the machines accurately.

In December, Rossi finalized the specification for the device to be tested, and IH produced a number of them and shipped them to the test site, along with an electrical control system built by IH. With IH's agreement, Rossi chose not to hold the test in North Carolina. It would have been inconvenient for the professors, all of whom are from Europe, who wanted to be present for much of the 30 day test. The most prominent of the professors, Sven Kullander from Sweden, was undergoing cancer treatments and could not travel to North Carolina. Rossi found an industrial site in Lugano, Switzerland where they could operate the test reasonably conveniently. After this decision was made, Kullander died unexpectedly from a heart attack, perhaps associated with his treatments. While this took away an important reason for holding the test in Europe, IH management still felt this was the best location. IH did not want to be associated with the test, because it could have affected the appearance of independence. And, it would be best for as many outsiders to spend as much time at the test site as possible.

IH shipped the devices and equipment to Lugano in January 2014, but the test did not start until the end of February due to logistics and set up time. The first reactor failed after a day of operation due to a crack in the ceramic material, which was suspended between two supports. Rossi replaced it with a backup reactor, along with another supporting bracket so it would be less inclined to fail. The reactor was operated without fuel initially so the professors could assess its thermal characteristics and calibrate their equipment. Then it was fueled and operated at a moderate power input for 10 days. At that point, the power was increased substantially, and it operated at that level until the professors stopped the test after 32 days. IH personnel made a total of 5 trips to the test site and met all of the professors at one time or another. They were positive about the test after the first few days of operation, and they made comments about observing history being made. However, they provided no data or actual results to Rossi or to IH at that time.

The equipment was returned to North Carolina in April, and the professors began the process of aggregating their data and preparing their report. IH received a draft copy of the report in June, showing a COP of 3.1 at the lower power setting, and 3.6 at the higher setting. The analysis seemed thorough, and it addressed several criticisms from prior reports. The description of their instrument calibration process was impressive. Also, they did not fluctuate the power input, which Rossi believes substantially increases COP. They held it at a constant level, aside from the one power increase after the tenth day, because changing it would complicate their measurements. The thermal infrared camera settings vary with temperature, so if the temperature was changing in cyclical pattern, the camera settings would have to be changing constantly.

Rossi returned to the U.S. after the test, and he has begun to focus on the 1 MW plant. For example, the 1 MW plant's control system was redesigned for automated operation, such that each of the 107 reactors will be controlled based on temperature and water flows. Currently, it has no automated control systems, so each device must be manually adjusted. Rossi wants to operate it on a continuous basis, for a commercial customer. Rossi has reached a tentative agreement with Johnson Matthey, Plc, a U.K. company in the catalyst business, to use steam process heat from the plant for a two-year period beginning in September, in exchange for a payment of \$1,000 per day. Rossi and Fulvio Fabiani would manage the plant, to the extent it needs it. The Johnson Matthey facility is in Miami, FL.

Meanwhile, Industrial Heat personnel continue to meet with other industry participants, contemplating a technology rollup in the LENR sector. A list of LENR thought leaders and inventors that have been contacted by IH or Deep River Ventures, acting for IH, is included with this Memorandum as Exhibit C.

Since October 2012, IH, directly or through IPH, has invested over \$20 million, most of which has gone directly to Rossi and his partner, AmpEnergo, Inc., either for the purchase of rights to Rossi's LENR technology or for the purchase of prototype reactors. The remaining portion has been used to support Rossi's research and development activities over the preceding 18 months, as well as to fund efforts to invent related, supporting technologies and to capture and file for patents on core intellectual property. Some of IH's funding has also been used to identify other potentially promising LENR technologies as noted above.



Industrial Heat, through IPH, is now raising additional capital in order to: 1) retain premier consulting and investment banking firms to assist in identifying commercialization partners and to provide advice concerning the strategy for building and capitalizing the business, 2) invest in further R&D to develop core technology as well as ancillary, related technology, 3) acquire other LENR technologies and invest in other LENR startups and 4) return initial capital to seed investors. This will allow Industrial Heat to develop a unique knowledge base and intellectual property portfolio in the LENR sector. This will prove advantageous as IH begins to enter joint development and licensing agreements with commercialization partners.

#### ***B. E-Cat Independent Test Results***

In December 2012, Guiseppe Levi, of Bologna University, and Evelyn Foschi, an independent consultant based in Bologna, Italy, conducted a 96-hour test of an E-Cat reactor. In March 2013, Torbjörn Hartman, Bo Höistad, Roland Pettersson and Lars Tegnér, all of Uppsala University, and Hano Essén of the Royal Institute of Technology in Stockholm, Sweden, joined Levi and Foschi to conduct a similar 116-hour test. Collectively, the team published a report of their findings from both the December and March tests, revealing a COP of approximately 5.6 in the December test and a COP of approximately 2.6 in the March test (a copy of the published report concerning these tests is attached as Exhibit A).

Moreover, IH received an unofficial analysis of the fuel used in the March test which showed a change in isotope concentration in the nickel powder. This is encouraging if it is accurate, because an isotope change would indicate that some kind of nuclear reaction had occurred.

In March 2014, the same committee conducted a follow-up test, this time on a slightly different version of the high-temperature reactor. Importantly, however, the test was 32-days—much longer than any previous test. The duration was extended in order to definitively rule out the possibility of a chemical reaction. While the report has not yet been published, a preliminary draft indicates a COP of approximately 3.1 to 3.6. A copy of the preliminary draft report of the March 2014 test is attached as Exhibit B.

In addition, the March, 2014 test detected slightly elevated neutron levels at a 50cm range from the E-Cat (see pages 33-34 of the preliminary draft report, Exhibit B). However, these radiation levels were within one standard deviation of the background level, so they do not appear to be dangerous.

These results, if accurate and replicable, mean this technology could have the potential to significantly decrease the environmental impact of energy production in an extremely cost competitive manner. Based on these results, the technology appears to be able to produce substantial energy without generating any emissions or radioactive waste, all while consuming minute amounts of raw material (primarily nickel and hydrogen). The specific energy density of the technology appears to be well beyond that of any conventional source of energy. In fact, its energy density appears to be close to that of radioactive fuels used in nuclear reactors, such as uranium-235. The preliminary draft report from the March 2014 test concludes:

*The quantity of heat emitted constantly by the reactor and the length of time during which the reactor was operating are such as to rule out, beyond any reasonable doubt, a chemical reaction as underlying its operation. This is emphasized by the fact that we stand considerably more than 10 sigma*

*from the region of the Ragone plot occupied by conventional energy sources. We are therefore certainly dealing with a new source of energy.*

### **C. E-Cat Licensing Agreement Overview**

In the fall of 2012, Industrial Heat entered into a licensing agreement with Andrea Rossi/Leonardo Corporation and AmpEnergio, Inc. (a full copy, including amendments, as well as the “Contribution Agreement” between AEG and IH and its amendments, is attached as Exhibit D). This license agreement was subsequently assigned to IPH. The license provides Industrial Heat with the rights to all intellectual property required to manufacture, distribute, operate and service the E-Cat in North America, South America, Central America and the Caribbean, China, Russia, Saudi Arabia and the United Arab Emirates, along with the right of first offer with respect to any new licenses offered outside this territory.

The licensing agreement contemplates a total capital outlay of about \$150 million, paid over three installments, described below:

- 1) **Installment I:** The initial installment was paid in October 2012, and totaled \$2 million, of which \$500,000 went to AmpEnergio (“AEG”) with the remaining \$1.5 million going to Rossi’s company, Leonardo Corporation for the purchase of a 1 MW LENR device. AEG is a long-time partner of Rossi and, in exchange for funding Rossi’s research over the years and connecting Rossi to the investors behind Industrial Heat, AEG is entitled to approximately 1/3 of the total proceeds that would have otherwise been payable from the licensing agreement. No IP or trade secrets were provided to Industrial Heat after making the initial payment of \$2 million. Instead, Rossi used these funds to further develop the technology and to build the 1MW LENR device, which he tested in Ferrara, Italy in April-May 2013.
- 2) **Installment II:** In May, 2013, Rossi generally achieved the performance milestones required in section 3.2(b) of the licensing agreement by operating a portion of the 1 MW device in Ferrara, in a test overseen and certified by a validation consultant. Rossi requested that he operate only a portion of the 1 MW plant, because he said he was unable to get noise permits allowing the operation of a generator large enough to power the entire 1 MW E-Cat plant. IH consented, and he operated 18 of the 107 reactors in the plant. Those 18 produced a COP of 10.85, according to Fabio Penon, the certification engineer whose data and process were reviewed by Industrial Heat. Consequently, pursuant to the terms of the agreement with Rossi, Industrial Heat paid an additional \$10 million in May, 2013. Payment of the \$10 million triggered a complete intellectual property disclosure from Rossi, which occurred in June 2013. This event also triggered an additional obligation to AEG, which after various modifications resulted in IH paying AEG \$4.2 million in cash plus \$505,050 in the form of a 1% equity membership interest in Industrial Heat, LLC.
- 3) **Installment III:** Pursuant to section 5 of the License Agreement, if Rossi is able to successfully operate a 1 MW plant at a COP of 4 or greater for 350 out of 400 consecutive days after delivery of the plant to IH, and the plant operates at the level at which validation was achieved in the April-May 2013 Ferrara test, he would be entitled to receive \$89

million. If, however, the COP was greater than 4, but less than the validation level, the payment would be decreased proportionally. If the COP is less than 4, Industrial Heat would not owe Rossi any additional money nor would he be entitled to an equity share in Industrial Heat.

Rossi has not operated the 1 MW plant since it left Ferrara in 2013, and only recently has he begun to focus on preparing the 1 MW plant for operation. The 1 MW unit will not be ready to operate until September 2014 or later, according to Rossi.

At the appropriate time, Industrial Heat intends to acquire the rights to the E-Cat in territories it does not currently own, such as Africa, Europe and Australia. Rossi has indicated a strong desire to sell these rights to Industrial Heat, because he does not want to create and operate a business himself. IH has the right to acquire them if he offers them for sale to anyone else.

#### ***D. Industrial Heat Intellectual Property***

Since the E-Cat trade secrets and related intellectual property were disclosed to Industrial Heat in the spring of 2013, IH has focused on identifying and protecting core intellectual property associated with the E-Cat fuel and the reactor designs. This work has resulted in a small number of potentially high value patent applications filed by Industrial Heat. Filing these patent applications has entailed a significant amount of time and relationship management with Rossi. Although not required by the agreements, IH management prefers that Rossi be involved in IP filing decisions related to anything he has invented or co-invented. These and other filings are listed in Exhibit E, which provides a list of Industrial Heat's filed intellectual property to-date. Consistent with IH's intellectual property strategy, final patents will be issued to and owned by IPH.

Going forward, IH intends to continue to expand upon its initial patent filings. IH believes valuable LENR intellectual property, beyond the core technology, lies in controls, packaging, manufacturing, storage, monitoring, safety, security, distribution, and user interaction technologies. IH has identified over 80 concepts in these areas, a significant number of which management feels can be developed into potentially high value patents. In order to capture the value of this intellectual property, IH will need to develop these concepts further, including building prototypes or performing technical tests. IH will also need to refine, test and develop its core technology further in order to capture as much potential IP associated with the fuel and the reactor as possible. This work could be accomplished by: 1) contracting with outside research and development firms; and/or 2) entering into joint venture relationships with larger corporate partners; and/or 3) staffing and outfitting an internal R&D arm.

Industrial Heat is working with Deep River Ventures ("DRV"), an intellectual property consulting firm, to identify and retain valuable intellectual property in the LENR sector. One of the principals of DRV, Paul Morris, is a prolific inventor with over 60 issued patents and an additional 250 pending patents. Morris has a long standing track record of generating high value IP—his portfolio to-date has generated over \$370 million in IP licensing and royalty revenues across a broad range of products, services and features. Morris believes inventing is an acquired skill that can be taught and developed when working with the right types of experts in any given field. DRV will work with Industrial Heat inventors as well as its contracted R&D firms to train and develop them in order to increase the quality and quantity of assets in Industrial Heat's IP portfolio.



In all cases, IH will continue doing internal R&D, because management intends to support Rossi in his future work. This is prudent for relationship reasons, but also because he continues to create new ideas, some of which could be important. However, IH believes that most of the development work will be accomplished through outside firms. As a practical matter, it seems unlikely that IH could create the kind of team needed to implement this technology fully, across all of its applications, many of which cannot be imagined at this time. So, management's current thinking is that the immediate R&D decisions relate to choosing and negotiating relationships with outside entities, and evaluating whether to staff internally beyond the minimum needed to support Rossi.

#### ***E. LENR Sector Strategy***

In addition to further developing its own intellectual property in the LENR sector, Industrial Heat intends to invest in or acquire other promising LENR technologies. IH believes it will be valuable to own or have rights to other promising LENR technologies and to work with partners to further develop and commercialize them. While IH believes Andrea Rossi's E-Cat is presently the most important LENR technology available, the company also will invest in others. Such a strategy decreases risks, increases upside exposure and enables IH to create unparalleled LENR know-how and intellectual property. By way of example, different inventors may have partial answers to key LENR questions, but they are prevented from succeeding because they lack associated relevant information. By blending multiple LENR strategies, IH may be able to realize breakthroughs that could not be achieved by individual inventors working alone.

Following this strategy, in the winter of 2013, IH invested \$300,000 in Brillouin Energy Corporation in Berkeley, California. Brillouin is based on LENR technology developed by Robert Godes. More detail on the Brillouin investment is provided below.

Industrial Heat has also worked through DRV to develop relationships with a number of the top LENR inventors. These inventors are at various stages of development, but most have small prototypes and claim some degree of excess heat production. IH's position is strongest while these inventors are still in the testing and prototyping stages. Therefore, after capitalization, IH has budgeted \$16.5M of investment capital for this purpose. Industrial Heat will create standard terms and conditions for relationships with other LENR inventors and startups, with the overarching goal of gaining rights to or acquiring LENR intellectual property and expanding the inventor base. Meanwhile, Industrial Heat will use DRV to begin working with and training the LENR inventors and startups in methods for capturing intellectual property so that it can be patented. Such a strategy, if successful, would create a significant volume of high volume, high quality IP for Industrial Heat.

Some of the entities/inventors slated for potential future investment are below:

- 1) **Brillouin Energy Corporation, Berkeley, California:** Brillouin Energy Corporation is a startup focused on developing and commercializing the LENR know how developed by Robert Godes. Brillouin's technology is focused on a controlled electron capture reaction. Supposedly, hydrogen from water is combined with a nickel lattice, which is compressed as an electronic pulse passes through the system.

In February 2013, Industrial Heat participated in a bridge financing offering issued by Brillouin, providing \$300,000 in convertible debt with a 7% yield. Industrial Heat's note is still outstanding, but it will convert to equity (receiving a 15% discount to the incoming round) when Brillouin raises an additional \$2M in outside equity.

This initial investment in Brillouin is not indicative of the types of terms Industrial Heat plans to use with future inventors or startups in the LENR sector. Brillouin is a long-existing company that has spent tens of millions of dollars developing their system, so they are much further developed than most others in the sector. IH invested in Brillouin partly because they may have some promising components of a system that could benefit from Rossi's key breakthrough, but also to build industry goodwill and trust. Going forward, IH hopes to make a more substantial investment in Brillouin—one that will provide Industrial Heat not only a significant equity interest in the company, but also some rights to Brillouin's intellectual property and its use in certain geographic areas, such as China, if they are successful.

Capital required: \$5M, within 3 months.

- 2) **Dennis Letts, Austin, Texas:** the Letts Labs LENR Reactor Project is based on 24 years of research by Dennis Letts. Letts has performed over 7,000 LENR experiments and has published 10 peer-reviewed papers on LENR research that began under John Bockris in 1993. Letts is working to develop a working prototype of a LENR hot water heater. This work is based on his electrolytic dry cell research. As presently contemplated, Letts claims he could generate a COP of 3 to 6 in a reactor using \$700 worth of fuel, capable of producing a home's hot water for 10 years.

Capital required: \$1M, based on milestone success.

- 3) **Dennis Cravens, Cloudcroft, New Mexico:** Cravens is a former colleague of Letts from their time working together with James Patterson in the early 1990s on the original Patterson fuel cell. Cravens is working on H<sub>2</sub>/D<sub>2</sub> excitation in a metal lattice. Cravens is a professor of chemistry and physics at Eastern New Mexico University in Ruidoso and has 3 issued LENR related patents. After success with low power (i.e., approximately 1-5 Watt) devices, and considering verification of empirical testing conducted by Letts, Cravens has shifted his focus to building a higher power palladium-deuterium prototype. Cravens is estimating a COP of 3 with 500 W input and 1500 W output.

Capital required: \$1M, based on milestone success.

- 4) **Tadahiko Mizuno, Hokkaido, Japan:** Mizuno is a retired nuclear physics professor from Hokkaido University. It appears he has been successfully generating excess heat and transmuting elements via LENR experiments. Mizuno has developed an in-situ cathode growth / reaction methodology that supposedly is capable of consistently generating excess heat in a dry electrolytic LENR cell. According to Mizuno, this reactor generates a COP of 1.9. Mizuno needs funding to do further research and development and hopes to complete the build out of a platform that could be used for heating, cooking and boiling water.

Additionally, Mizuno is building 1 kW and 10 kW reactors to test using palladium and deuterium but has also had success with nickel and deuterium.

Capital required: \$4.5M, based on milestone success.

- 5) **Ed Storms and Tom Claytor, Albuquerque, New Mexico:** Storms and Claytor are two of the most renowned LENR theorists. They are seeking funding to continue research they initially began while working together at Los Alamos National Laboratory. Their research is focused on conclusively proving various LENR reaction materials and conditions.

Capital required: \$2M, based on milestone success.

- 6) **Mitchell Swartz, JET Energy, Boston, Massachusetts:** Swartz has developed a working LENR device, referred to as the Nanor, which continues to operate in low power excess heat cycles without degradation. It appears to be generating a 100-300 COP at the milliwatt level and a COP of 2 at 1 W input with 2 W output.

Capital required: \$1M, based on milestone success.

- 7) **George Miley, Lenuco, Urbana-Champaign, Illinois:** Miley is a professor emeritus of physics at the University of Illinois at Urbana-Champaign. Miley has developed a thin film hydride-based LENR device that he believes is generating hundreds of Watts of excess heat. Funding will be used to conduct further research and development.

Capital required: \$1M, based on milestone success.

- 8) **Miscellaneous other inventors:** IH intends to support the research and development efforts of various other individual inventors, including Yeong Kim, Bob Higgins, Nikita Alexandrov, Jean-Paul Biberian and others. These individuals have developed reactors, models and/or microelectromechanical systems ("MEMs") for LENR heat generation and/or in-situ reaction management.

Capital required: \$1M, based on milestone success.

Industrial Heat intends to structure these investments so that pricing is agreed upon up front, with funds transferred over time, as the inventors achieve agreed-upon milestones. Most of these inventors will require substantially more capital over the long run, but these initial estimates should cover most of their research and development efforts over the next 12 to 24 months.

IH prefers to acquire or exclusively license the intellectual property generated by these and other LENR inventors in exchange for an initial payment combined with administrative support (i.e., legal, IP, back office and organizational structure), a commitment to fund additional amounts over time as milestones are achieved, and a share in a royalty pool created by IPH for its inventors. However, it may not be possible to secure these ideal terms. In such instances, IH may choose to make equity investments without obtaining specific rights to underlying intellectual property. While less than ideal, these types of investments still increase potential upside exposure and help IH build long term relationships that could evolve in the future. In such instances, the goal will be to invest a modest amount upfront while securing the option to invest substantially more later based on pre-set terms and pricing.

### F. Market for Heat and Electricity

In 2010, the world consumed the energy equivalent of 8,677 million tons of oil.<sup>1</sup> Global energy demand is estimated to increase 1.6% per year through 2035.<sup>2</sup> According to the International Energy Agency (IEA), heat and electricity represent 64% of the world's final energy consumption (i.e., energy that is supplied to the consumer for all final energy uses such as heating, cooling and lighting).<sup>3</sup>

While it is difficult to know the monetary value of global energy consumed, the crude oil equivalent in 2010 would have totaled more than \$5.85 trillion at \$95 per barrel, its kilowatt-hour equivalent would have totaled more than \$3.5 trillion at \$0.10/kWh and a 33% conversion efficiency, and its natural gas equivalent would have totaled more than \$1.5 trillion at a price of \$4.50 per million BTU's.

At 64% of worldwide energy consumption, the global market for heat and electricity would total nearly \$1 trillion if supplied entirely by natural gas, and more than \$3.7 trillion if supplied by oil. This does not include the market for capital equipment associated with producing this heat.

Below is an overview of the market for heat and electricity supplied by only coal, oil and natural gas in China, the United States and Russia—estimated to be more than \$358 billion per year.

*All values in USD Millions*

#### China, US and Russia: Market for Heat and Electricity\*

Country	Electricity**	Heat***	Combined Total
China	143,000	13,000	156,000
US	112,000	2,000	114,000
Russia	62,000	26,000	88,000
Total	\$ 317,000	\$ 41,000	\$ 358,000

*\*Based on the value of heat and electricity consumed from coal, oil and natural gas sources. Does not include heat and electricity derived from nuclear, renewables, waste or other sources.*

*\*\*Assumes electricity at \$0.10/kWh, and values the assoc. thermal energy at 40% of the price of electricity.*

*\*\*\*Assumes coal at \$45/ton, oil at \$95/barrel, natural gas at \$4.50/Mcf.*

Source of primary data: International Energy Agency, [www.iea.org](http://www.iea.org), 2011 data

**China:** <http://www.iea.org/statistics/statisticsearch/report/?country=CHINA&year=2011&product=ElectricityandHeat>

**US:** <http://www.iea.org/statistics/statisticsearch/report/?country=USA&product=electricityandheat&year=Select>

**Russia:** <http://www.iea.org/statistics/statisticsearch/report/?country=RUSSIA&product=electricityandheat&year=2011>

<sup>1</sup> 2012 Key World Energy Statistics, International Energy Agency, pg. 28, <http://tinyurl.com/b6psbfj>

<sup>2</sup> International Energy Outlook 2011, US Energy Information Administration, September 2011, pg. 10 <http://www.eia.gov/forecasts/ieo/>

<sup>3</sup> International Energy Agency website, <http://www.iea.org/topics/heat/>

If IH succeeds in commercializing a device that is capable of generating 4 times its electrical input energy, it will have created a technology that can displace traditional fuel sources in generating both heat and electricity without generating any emissions or creating any radioactive waste. In the US, China and Russia alone, such a technology would be entering a market worth more than \$350 billion/year.

Industrial Heat believes this initial addressable market size justifies a sector-based approach in the LENR field. The E-Cat may be ahead of the competition at this point, but it is important to invest in or acquire other LENR technologies and thereby diversify upside exposure, increase access to inventors and aggregate valuable LENR IP into Industrial Heat.

### **III. USE OF FUNDS**

Industrial Heat is raising \$50 million of growth capital to cover operational, R&D and investment expenses over the next 12-18 months and to provide for the return of capital to certain seed investors. Capital will be used as follows:

#### **1) G&A expenses: \$3.5 million**

This includes costs such as office and laboratory rent, salaries, contractors, legal, accounting, equipment rental, lab and office supplies, travel, public relations and miscellaneous other expenses, such as insurance.

#### **2) Strategy consulting: \$5 million**

Industrial Heat intends to retain top consulting and investment banking firms to provide counsel on a range of matters, including but not limited to: a) a worldwide capitalization and go-to-market strategy, b) identifying and brokering joint development or licensing agreements with large, established technology partners (such as BAE, Boeing and Texas Instruments), c) international corporate structure.

#### **3) Research & Development: \$10 million**

Industrial Heat intends to work with outside R&D firms to conduct additional research and development around the fuel and the reactor. In addition, IH intends to contract out the development of IP related to the core technology, such as: controls, packaging, manufacturing, storage, monitoring, safety, security, distribution, and user interaction technologies. In addition to using outside firms, IH intends to support the research and development activities of Andrea Rossi as well as other inventors, and also to retain some staff and facilities for internal research and development and testing.

#### **4) Returning capital to early investors: \$15 million**

Industrial Heat to date has been funded by a group of individual investors. These investors do not have long time horizons, if for no other reason than because of age—most are in their 60's or 70's. They are business friends of Tom Darden who supported IH because they were asked to, and because they understood there was a critical, high-risk moment when IH could capture Rossi's technology under acceptable terms, if the company had the necessary capital available to it. They also realized that inaction literally might deprive the world of the potential benefit of the



E-Cat technology, because it was not clear that Rossi would ever find a way to get the E-Cat to market on his own. Accordingly, management wants to return most or all of these investors' capital. They would retain equity in the business, although without any significant ongoing rights. The largest investor in Industrial Heat, Tom Darden, will leave all of his capital in IH, so he will not participate in the early investor return of capital.

**5) LENR sector strategy: \$16.5 million**

As outlined above, Industrial Heat sees significant value in pursuing a LENR sector strategy. Though IH was formed initially to invest in the E-Cat technology, management believes a prudent use of capital is to license or acquire other LENR IP and/or to acquire an equity interest in other LENR startups. Funding other LENR inventors increases IH's inventor-base and enhances its ability to streamline and organize the efficient generation of valuable LENR IP. Acquiring an equity interest in other LENR startups is less ideal but it still achieves diversification and increases upside exposure. More capital will be needed in the future to provide follow on investments and to invest in new opportunities, but \$16.5 million is sufficient to make a number of significant early commitments over the next year.

**IV. RISK FACTORS**

***Lack of Operating History; Funding Risks***

Industrial Heat<sup>4</sup> is a newly formed entity with no operating history upon which to evaluate its likely performance. Industrial Heat is in a very early stage of development and it is not possible at this time to provide any projection or prediction of its financial performance. Industrial Heat's business plan is still being developed and is evolving. Although IH anticipates that it will be profitable if it is able to carry out its business objectives, Industrial Heat is also focused on positively impacting the world by providing an energy solution that will be significantly more cost effective and environmentally favorable than other sources. Investors in Industrial Heat should be similarly motivated. The IH business plan could include making the technology open source, such that much of the technology could be publicly available for further development and exploitation by third parties.

The assets of Industrial Heat are (1) the License Agreement with Leonardo Corporation ("Leonardo") and its sole shareholder, Dr. Andrea Rossi, pursuant to which IH purchased a 1 MW E-Cat plant as well as intellectual property associated with the E-Cat reaction, (2) a passive investment in an unrelated company developing similar LENR technology (Brillouin) and (3) a portfolio of intellectual property assets and contacts that have been developed by IH since its inception. There can be no assurance that IH will be able to commercialize any of its IP or that IH's targeted results will be attained. Additionally, significant capital will be required in order for the Companies to acquire and maintain the IP that it will need and then develop, manufacture, and commercialize the E-Cat technology and products. There can be no assurance that the Companies will be able to generate or raise the capital required to continue the rights under the License Agreement or to implement their business plan.

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<sup>4</sup> Please note that references in this Risk Factors section and elsewhere in this Memorandum to "Industrial Heat" or "IH" shall be deemed to include its subsidiary, IPH International B.V., as the context may require.

Industrial Heat's business plan may also include negotiating with other inventors and companies to obtain commercialization rights in other promising LENR technologies and/or making investments in such technologies, as well as developing and patenting IH's own proprietary intellectual property involving systems ancillary to the development of LENR. There can be no assurance that Industrial Heat will be successful in such endeavors.

### ***Unproven Technology***

Industrial Heat's business involves certain developing and unproven technologies. The technology that IH will attempt to commercialize is a form of low energy nuclear reaction ("LENR") technology. LENR technology has been rejected by some members of the mainstream scientific community because many experimental results could not be replicated consistently and reliably, and because there is no accepted theoretical model of these types of reactions. Although IH believes that the technology that has been licensed from Leonardo produces substantial excess energy, and although it has been independently tested and validated, the technology or its acceptance in the marketplace cannot be guaranteed. Previous testing of Leonardo's technology has had mixed results. Some tests have failed, while others have appeared to succeed. Despite the initial validation, there is no guarantee that the E-Cats will continue to operate at the specified levels, or at all.

### ***Radiation***

The inventor represents that both the fuel for the E-Cat and the remaining waste from producing energy in the E-Cat are not radioactive or otherwise harmful. According to the inventor, E-Cats produce energy in the form of radiation, either gamma rays or x-rays or both. This radiation is contained by the structure of the E-Cat, so it is not detected outside the reactor, or the levels are very low. However, if a reactor unit were to be opened while operating, either intentionally, by accident or due to a defect or explosion, it could emit harmful gamma rays or x-rays outside the device. In IH's limited experience, some reactors have melted or cracked open while operating, without any detected release of radiation. However, IH has not had the opportunity to study these reactions in detail, or the resulting waste, so the company cannot verify the extent of the risk that could be created by such an event, nor is it clear that the fuel and waste are never harmful.

### ***Delivery of IP; IP Protection/Infringement***

After Industrial Heat made its second payment to Leonardo Corp. in May 2013, Rossi delivered drawings, specifications and detailed technical information to designated IH personnel. This intellectual property, which IH has undertaken to protect with patent applications, is IPH's primary asset and the primary asset of the Companies. The E-Cat IP deliverables included books with the construction drawings and instructions necessary to manufacture the E-Cat, operate the E-Cat, manufacture the control systems and operate the control systems, one issued patent, and eight pending patent applications. The Companies cannot be certain that the E-Cat IP delivered by Rossi is complete or sufficient to enable the Companies to carry out their objectives.

Of the nine patents included in the original E-Cat IP disclosure, eight are pending applications and one has been issued. The patent applications filed by Rossi or IH since May 2013, all are pending. The issued patent was approved by the Italian Patent and Trademark Office on April 6, 2011, and is valid only in Italy. Italy is not within IPH's territory under the License Agreement. Under then-current Italian