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## **Déjà Vu and a Future that Touches on the Outer Limits**

*“In a vast new world that touches on the outer limits, we see war concentrated in highly asymmetric urban environments, with heavy emphasis on sensors, and everything around us now run by powerful artificial intelligence, totally automated and autonomous. Swarms of bird sized drones threaten on a daily basis. Yes, the world as we know it is now a wireless wonderland, and the ultimate weapon of all, wireless death rays and guns that shoot bolts of man-made lightning, never run out of ammo.” Did we just have a bad dream, or... what?*

Tucson, Arizona; it was the year 2000 and a new company was about to be born. They would call themselves Ionatron, and they were working on something big. It was based on the same principle that Nikola Tesla and many others had worked on during past lifetimes but could never finish. Here it was, a remarkable new occurrence using plasma channels to carry electricity to its destination. It was Tesla’s wireless electricity, aka man-made lightning, but up until now nobody had ever figured out how to harness such a massive amount of energy. The new scientific name for this discovery was Laser Induced Plasma Channel, and Ionatron would call it ‘LIPC’ for short. Over the next few years a group of Ionatron scientists and PhD’s (led by Ionatron cofounders Tom Dearmin, Steve McCahon PhD. and Joe Hayden) would begin the highly confidential process of assessing LIPC as a revolutionary new Directed Energy Weapon (DEW) of the 21<sup>st</sup> century.

Then, on a hot desert day, shortly after building a test site demonstration, an unsolicited knock came at the door. It was the Navel Research Lab and the CIA. They came to view what they had heard through the grapevine was a laser guided energy proof of concept. With keen interest they sat and they listened. Then as they watched, their excitement quickly began to grow. The project, and the successful laser guiding of 100’s of kilowatts of electrical energy to a target, had all the markings of a novel revolutionary discovery, and one that could be weaponized for lethal or less than lethal effects on humans. Just as remarkable were the effects on electronics, communications, explosives, infrastructure and vehicles. The demonstrations were so powerful that with the proof of concept completed, it was now more important than ever for Ionatron to create documentation protecting its intellectual property. Coinciding with this, and because the technology was so novel and technically advanced, the project would require new government rules specifically assigned to it. For starters, the project was immediately labeled ‘Top Secret’ and the government officially requested that all critical personnel instantly become ‘classified’; additionally, areas of highest sensitivity promptly were to be assigned ‘top secret’ credentials with special debriefings required in Washington D.C. as soon as possible. Interestingly, and shortly after DARPA verified the technology, the CIA’s quasi-investment arm ‘In-Q-Tel’ was so impressed with LIPC technology that it would become an early angel investor in Ionatron.

### **Gamechanger, AE’s LGE Wireless Electricity has 11 Active ‘Top Secret’ Patent Applications (GSPA’s)**

As a result of this work, a revolutionary new technology was secure, and its new name would become Laser Guided Energy or (LGE). This sophisticated laser created filaments which broke the bond between oxygen electrons in the atmosphere from the oxygen molecules creating a laser induced plasma channel. The direction in which Ionatron pointed the laser would then be where the laser created a conductive path which allowed controllable electrical pulses of up to a million volts down the LIPC channel to achieve the desired effect at the target. All of these discoveries made LGE technology novel and significantly ahead of its time, but also created a complex set of problems that would require immediate action. At the top of the list was how to protect the

extremely valuable intellectual property which had been created. Ultimately, with great diligence, this led to a litany of new patents (25) current, with an additional (11) currently considered 'Secret' and listed as 'Classified' 'Government Sensitive Patent Applications' (GSPA's) held under Secrecy Order of the U.S. Government. These by definition are reviewed every year by the government agency that classified the application and they have no expiration date until such time as they are no longer classified after which they will receive the normal 17-year patent protection.

The ultimate mission of the company's directed energy program was to use an Ultra-Short Pulse Laser (USP) with comparatively little power to create what is called a Laser Induced Plasma Channel (LIPC). LIPC is a straight-line conductive channel that can carry controlled amounts of very high voltage electrical energy LGE which is pre-determined to travel only a designated distance. The key is it can be both a non-lethal and a lethal controllable destructive force weapon because of its unique ability to be adjusted using variable settings by the handler. Importantly, this also allows immediate decisions to be made in order to maximize, minimize or eliminate collateral damage depending on the mission objectives.

In short, what we have here is a controllable death ray. This was something no one had ever done before. Not that they didn't try. The death ray had been the dream of Nicola Tesla, and he spent the better part of his life working on it. The Ionatron model, like Tesla's, involved concepts in nature. When lightning strikes it creates a channel through which the lightning actually travels. Likewise, the technology Ionatron developed would create a plasma channel to transmit high voltage electricity.

### **Offering A Rare Opportunity ... Laser Guided Energy**

#### **LGE is the only 'Fundamentally Owned' Directed Energy Weapons Technology**

All current weapons that use lasers as a destructive force rely upon the power of the photons to heat and destroy the target. But LGE and LIPC only use the laser to create a conductive channel for the insertion of high voltage energy, which can now be controlled to destroy a target. This was a breakthrough technology never before seen, which could be used in weapon systems for many decades to come. It would evolve towards advanced adaptive optics and atmospheric and plasma energy interactions which allows cutting edge technologies, innovative laser accuracy and manageable lethality solutions for military missions with precision, safety and impact on a scale never before thought possible on the battlefield. When retired U.S. Navy Rear Admiral Thomas W. Steffens first saw a demonstration of this breakthrough technology, he commented, "This will change the nature of warfare and the battlefield long into the future." As a matter of reference, neither of the existing two key types of directed energy technologies, (HEL) High Energy Lasers or (HPM) High Power Microwave, are owned by a single company or entity. Conversely, and of critical importance, Laser Guided Energy LGE represents a third DEW technology. It is 'Fundamentally Owned' by Applied Energetics as a single developer and sets the table for a 'Generational Opportunity' and pure play in Directed Energy.

### **A New NASDAQ Listing Gone Wild and Banshee's in Afghanistan**

Ionatron had garnered a great amount of early interest and fanfare and ultimately wanted to become a publicly traded company. In March 2004, the company via a reverse merger became listed on NASDAQ as *Ionatron* with ticker symbol *IOTN*. It was met with a tremendous swarm of high-tech interest and market chatter, then an amazing stock run, as the stock moved from a low of \$.74 just before the reverse merger, to a high of \$7.71 a mere six weeks later. Ionatron would end 2004 as the 2<sup>nd</sup> largest percentage gainer on NASDAQ. The following year, in August 2005, Ionatron would ring the opening bell for NASDAQ in New York and by 2006 the company had grown to a NASDAQ market cap of over one billion dollars. Ultimately, in February of 2008, Ionatron would change its name to Applied Energetics (AE), ticker AERG, to more accurately reflect its business activities which by now included a special DoD project involving JIEDDO. This high priority project would use newly created Banshee Counter-IED technology, or JIN (Joint IED Neutralizer) for use in Afghanistan to help eradicate roadside

IED's. In fact, US convoys using JIN technology ultimately acted as lead convoy escort on 211 missions, having travelled over 15,000 miles of roads, and covering 1589 hours of operation in Afghanistan without a single casualty or incident involving vehicles following the cleared path by Banshee, a truly remarkable achievement. But by 2011, with the war in Afghanistan winding down, JIN was cancelled. By 2014, after years of government DoD budget cuts, Applied Energetics made the decision to preserve remaining company assets with thought toward a better budgetary opportunity down the road.

### **R&D and LGE Advanced Technical Integration Pave the Way for the Future**

It had previously been noted that R&D was a big part of AE's future with over \$100 million spent on R&D. But the advanced nature of Laser Guided Energy's R&D would exceed the outer boundaries of then current technology supported capabilities of equipment for the period 2004-2008. It would also create a complex set of new problems going forward, front and center of which involved creating next generation advanced weaponry platform integration. The process of how to seamlessly integrate Laser Guided Energy, LIPC and other similar advanced technologies into heavy equipment multi-use platforms compatible of supporting them would be highly technical and take a considerable amount of time and effort to assimilate. Once done, the future of LGE and LIPC will be defined by its unique battlefield usefulness and significant high-level technological advantages in combat, including advanced technology capabilities very specific to urban environments.

One of the more important things Applied Energetics did was to put critical effort and thought into its business plan with particular emphasis toward protecting its intellectual property at the highest level. This was substantiated by a strong foresight by management confident about the long-term future prowess of LGE and LIPC, but also aware of the many ups and downs of the DoD budgeting processes. As part of this, AE carefully protected its balance sheet, while shunning debt, thus allowing it to protect key assets and stay in the game for a better future. That opportunity would finally come as the calendar moved into 2016, with the DoD landscape for directed energy technologies beginning to reflect new interest and favorable change. Congress got the ball rolling in early 2016 with (S.2778 - Directed Energy Weapon Systems Acquisition Act of 2016). As explained in the bill, it re-designates DOD's High Energy Laser Joint Technology Office as the Joint Directed Energy Program Office. Furthermore, the Office shall: (1) develop a strategic plan for development and transition of directed energy weapons capabilities, and (2) use new and revised DOD policies to accelerate the development and transition of directed energy capabilities toward fielding.

### **The PROXY, New Management and a Historical Record for Delaware Law**

As we moved into January of 2018, a challenge for control of the company and its valuable patent assets emerged through a proxy held to replace with cause the single executive Board of Director (BOD) that held control of the company. The existing single executive BOD was asked via a submitted request by a registered shareholder to provide a shareholders list and later the corporate books of the company but refused. These actions were legally prepared, documented and submitted by an existing shareholder under articles covered by Delaware Corporate Law. However, in a seemingly unlikely turn of events, the shareholder proxy vote *prevailed* even without a shareholder list, and in the process the proxy win by Applied Energetics went into the Delaware Law historical record books dating back to 1899. The proxy had all the makings of a soap opera and at times a mudslinging contest. In the end, it was maybe the most unlikely proxy victory ever, and it won by a landslide, favorably gathering over 94% of the voting shareholders. The newly elected three-man BOD was led by *original cofounder, President and CEO* Thomas C. Dearmin, with Jonathon Barcklow and Brad Adamczyk as the other two directors. The new BOD immediately appointed Mr. Dearmin as CEO. Additionally, the company announced the return of Steven McCahon PhD as chief scientist. Steve was an original AE cofounder, acted as chief scientist and was the key architect of much of the company's original intellectual property. Dr. McCahon

spoke glowingly of a plethora of opportunities in new and exciting LGE innovation and other potentially related growth areas going forward.

*(Sadly, on August 3, 2018, with a heavy heart and great sorrow the company announced that co-founder and current CEO Tom Dearmin had passed away due to unexpected complications involving a medical procedure. Tom was a larger-than-life figure who brought his remarkable passion, experience and energy to Applied Energetics. Brad Adamczyk a current AE director has assumed the role of acting CEO during this transitional period.)*

### **Directed Energy in a World Built for LGE Innovation**

Moving toward 2019 and beyond, the landscape has changed favorably for many next generation advanced technologies, including Directed Energy, with new early stage growth emerging rapidly. The opportunities for Applied Energetics' LGE are led by a new U.S. president, and new leadership in the U.S. Department of Defense (DoD), including changes in the mindset pushing out into other government agencies as foreign competition gets closer to home. Add to this the potential breakthroughs involving LGE with both *additive technologies* and *advanced manufacturing 4.0*, and one can see a broad array of new opportunities just ahead.

In short, this new world of multi-use Directed Energy and commercial additive advanced manufacturing has the markings of something special and global in nature. It is being embraced by both government and commercial industry alike and is tracking toward a life of its own. Furthermore, all indications point to a long build cycle with rapid growth acceleration going forward. In summary, the current period is setting up for a sweet spot involving directed energy technologies, including novel new advanced LGE technologies and next generation Banshee C-IED innovation with LGE capability among the many current and future opportunities.

**Applied Energetics, Inc.**

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### **FORWARD LOOKING STATEMENTS**

Certain statements in this press release constitute forward-looking statements within the meaning of the Section 27A of the Securities Act of 1933 and Section 21E of the Securities Exchange Act of 1934. Forward-looking statements include all statements that do not relate solely to the historical or current facts and can be identified by the use of forward looking words such as "may", "believe", "will", "expect", "project", "anticipate", "estimates", "plans", "strategy", "target", "prospects" or "continue", and words of similar meaning. These forward-looking statements are based on the current plans and expectations of our management and are subject to a number of uncertainties and risks that could significantly affect our current plans and expectations, as well as future results of operations and financial condition and may cause our actual results, performances or achievements to be materially different from any future results, performances or achievements expressed or implied by such forward-looking statements. We do not assume any obligation to update these forward-looking statements to reflect actual results, changes in assumptions, or changes in other factors affecting such forward-looking statements.

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