



**APPLIED
ENERGETICS**

Directed Energy, Anywhere

MARCH 2024

Company Presentation



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Additional Information

Applied Energetics, Inc.'s internet address is www.appliedenergetics.com. The company makes available, free of charge, all SEC filings at www.appliedenergetics.com. Its annual report on Form 10-K, quarterly reports on Form 10-Q, current reports on Form 8-K, and amendments to those reports filed or furnished pursuant to Section 13(a) or 15(d) of the Exchange Act, are available as soon as reasonably practicable after they are electronically filed or furnished to the SEC. You also may request a copy of each document at no cost, by writing or calling us at the following address or telephone number:

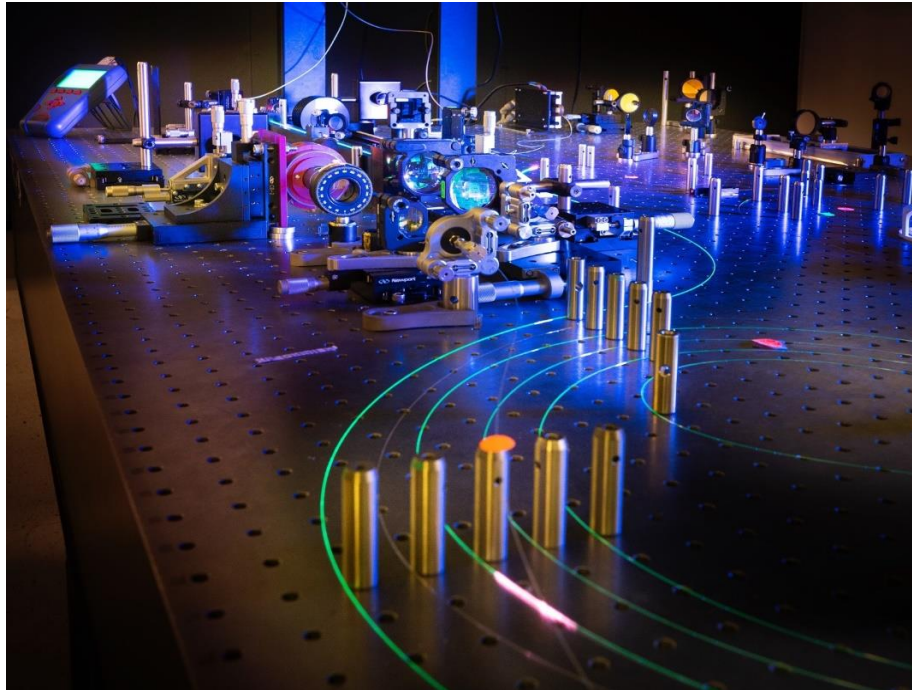
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Applied Energetics

Mission: Innovating and shaping the future of directed energy technologies that defend our warfighters and critical infrastructure.



Corporate Capabilities

- Customer Mission Focus
- UltraShort Pulse Lasers (USPL)
- Frequency Agile Optical Sources from Ultraviolet (UV) to Far Infrared (IR)
- Advanced Fiber Applications
- Laser Guided Energy (LGE®)
- Laser Induced Plasma Channel (LIPC®)

Why Invest in Applied Energetics?

Emerging ISR Threats Ideally Countered by Ultrashort Pulse Lasers

Unmanned semi- and fully- autonomous threats are dramatically increasing in number and capability. These threats are vulnerable to USPL effects with limited time required to defeat ISR sensors.

High Value Directed Energy Effects at Best Size, Weight, and Power in Market

Only national-security focused USPL pure-play; USPLs deliver high-value counter-ISR effects in a SWaP footprint that allows deployment on almost any military platform

Unmatched IP Portfolio

More than \$50 million in public and private capital invested, 25 issued patents, 11 applications held under government secrecy orders, and 10 additional patents pending

Accelerating Addressable Market

Global directed energy weapons market expected to grow at 19% CAGR to \$17.8 billion by 2028; Counter-Unmanned Aerial Systems (UAS) market expected to grow at 17% CAGR to \$6.8 billion by 2030

Defense Applications Open Door to Commercial Markets

Defense applications open doors to commercial markets such as advanced manufacturing, pathogen detection and neutralization, and imaging of biological tissue

Elite Management Team; State of the Art Facilities

More than 100 years of combined executive team experience; 21,300 sq. ft. laser-dedicated development and manufacturing facility in the University of Arizona Tech Park

Problem Statement

Unmanned semi- and fully-autonomous aerial, ground, and surface vehicle threats are dramatically increasing in number and capability



“The crisis is on the counter-UAS...we need the counter-UAS capabilities at scale. We need production lines to go up fast...the production for counter-UAS [has] to go through the roof.”

-Bill LaPlante, Under Secretary of Defense for Acquisition and Sustainment, December 2 at 2023 Reagan National Defense Forum

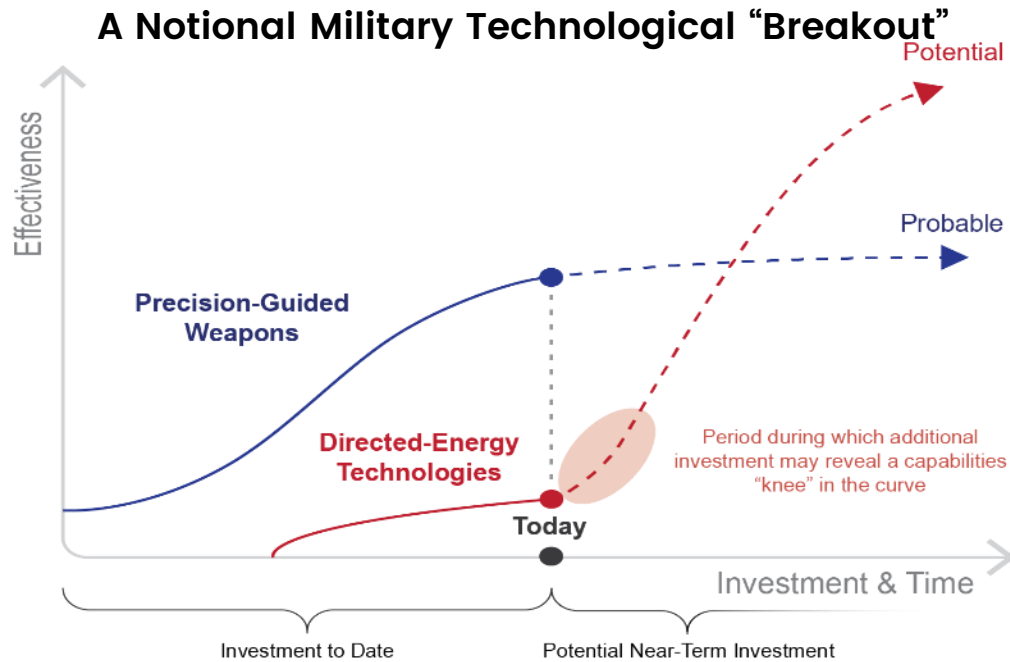
Emerging Threats Ideally Suited for Directed Energy Effects



- The proliferation of commercial-off-the-shelf sensors and unmanned systems are providing both traditional and asymmetric forces with **improved intelligence gathering and improvised threat capabilities enabling low-cost and low-tech solutions against high value targets**
- The vast majority of these threats are piloted through cameras mounted on the vehicle. These sensors are highly vulnerable to the effects of ultrashort pulse lasers.

AE Directed Energy Hasn't Reached a Tipping Point...Yet

Directed energy still in early stages of development and adoption.



CSBA, *Changing the Game: The Promise of Directed-Energy Weapons*
https://csbaonline.org/uploads/documents/CSBA_ChangingTheGame_ereader.pdf

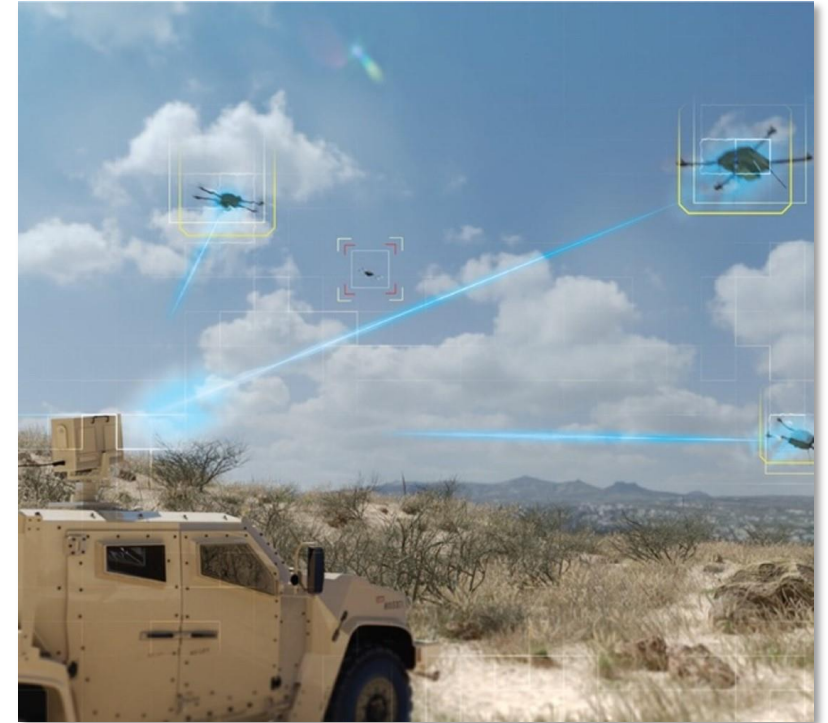
What is needed to finally cause the inflection point in the adoption of directed energy?

1. A widely proliferating threat uniquely suited to being countered by directed energy weapons
2. A directed energy system that delivers both
 - High value effects against the threat (USPLs can do this)
 - At a size, weight, and power that makes it widely deployable across multiple platform types and fixed sites. (AE’s design objectives would deliver this)

AE is well positioned to be a catalyst to “bend” the adoption curve of directed energy

Solution: Ultrashort Pulse Lasers

- 1 Common underlying architecture across all counter-ISR applications
- 2 High peak power allows for sub-second sensor kills
- 3 Laser wavelength can be matched to sensor wavelength
- 4 Efficient, compact, and ruggedized optical fiber-based architectures
- 5 Simultaneous multi-wavelength generation for enhanced effects

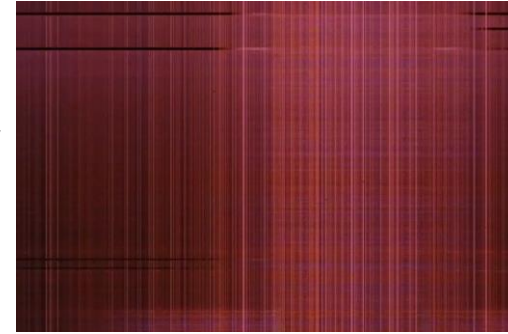


UltraShort Pulse Laser Effects: Counter-ISR Sensors



Destroy

Sensor fails to operate



Damage

Permanently damage pixels and control lines



Jam

Temporarily blind the sensor



Increasing
Energy
per Pulse

and/or

Decreasing
Range
to Target

USPL Offer Size Weight and Power Advantage

USPL offers Size, Weight, and Power (SWaP) attributes that enable deployment on almost any platform



- Lighter, smaller, more portable, and provides diversified lethality
- SWaP-C reductions by multiple orders of magnitude

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Ultrashort Pulse

Lightweight USP Source for On-the-Move Counter-UAS Operations (Notional)

- Laser engagement on-the-move
- Uninterrupted operation
- Compact, modular capabilities
- Peak Laser Power Output: 10^{12} Watts (W)
- Laser Electrical Power Consumption: ~1 kW
- Laser System Weight: ~10s lbs.

Continuous Wave (CW)

Representative 10kW CW Laser

- Stationary laser engagement
- Limited duration operation before recharge
- Extensive laser system component footprint
- Peak Laser Power Output: 10,000 Watts (W)
- Laser Electrical Power Consumption: ~100 kW
- Laser System Weight: ~1000s lbs.

Applied Energetics Is a Leader in Ultrashort Pulse Lasers

AE has built a substantial moat of IP, past performance, and current contracts that give it a leadership position in the market



Strong IP Portfolio

Over \$50M of public and privately funded IP with a portfolio of 25 awarded patents, 11 applications held under government secrecy orders, and 10 additional patents pending.



Proven Performance

Designed, delivered, demonstrated mobile USPL platform in the terawatt (TW) – class output for open air testing in multiple environments. 16-weeks from project start to DoD acceptance; modeling and target effects demonstrated



Mission Relevant Contracts

Since mid-2022, AE has received three awards each addressing critical customer missions:

- Marine Corps: Counter-ISR
- Army: Infrared Countermeasures (IRCM)
- Navy: Platform defense



Applied Energetics Leadership



Dr. Greg Quarles
President & CEO

- Over 30 years of executive experience in lasers and defense
- Established strategic priorities leading to award of multiple programs of record
- Recognized expert by Congress and senior leaders at the Pentagon
- Leading innovator of dual-use optical technologies globally



Chris Donaghey
CFO / COO

- Almost 30 years of experience in national security, technology, and finance
- Led the completion of more than \$450 million in public equity and debt capital raises
- Led the execution of 17 completed M&A transactions estimated at more than \$4.5 billion in total value
- Co-founder and Board Member of the Silicon Valley Defense Group non-profit



Dr. Stephen McCahon
Chief Science Officer

- Over 30 years experience as a scientific researcher, technology developer, and entrepreneur
- Lead developer of the AE proprietary breakthrough technology Laser Guided Energy
- Industry recognized leader in the development of advanced optical materials, photonic devices, Ultra Short Pulse Laser sources and their applications
- Co-authored more than 50 scientific publications and more than 30 patents issued and/or pending



Mary O'Hara
General Counsel & CLO

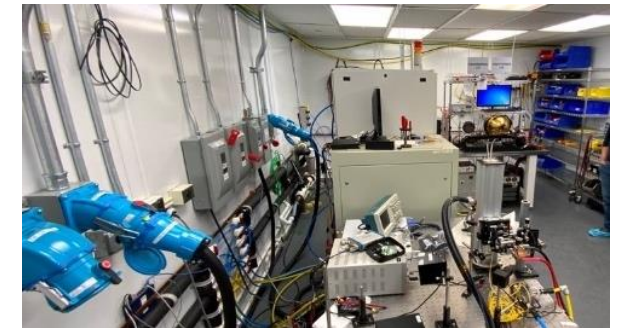
- Over 30 years practicing law with broad experience in all facets of securities, corporate, and commercial law
- Served as outside counsel to companies from start-up through exit and all stages in between
- Represented companies in public and private securities offerings; advised on national market listings
- Represented both buy-side and sell-side parties in M&A transactions

Our Facilities

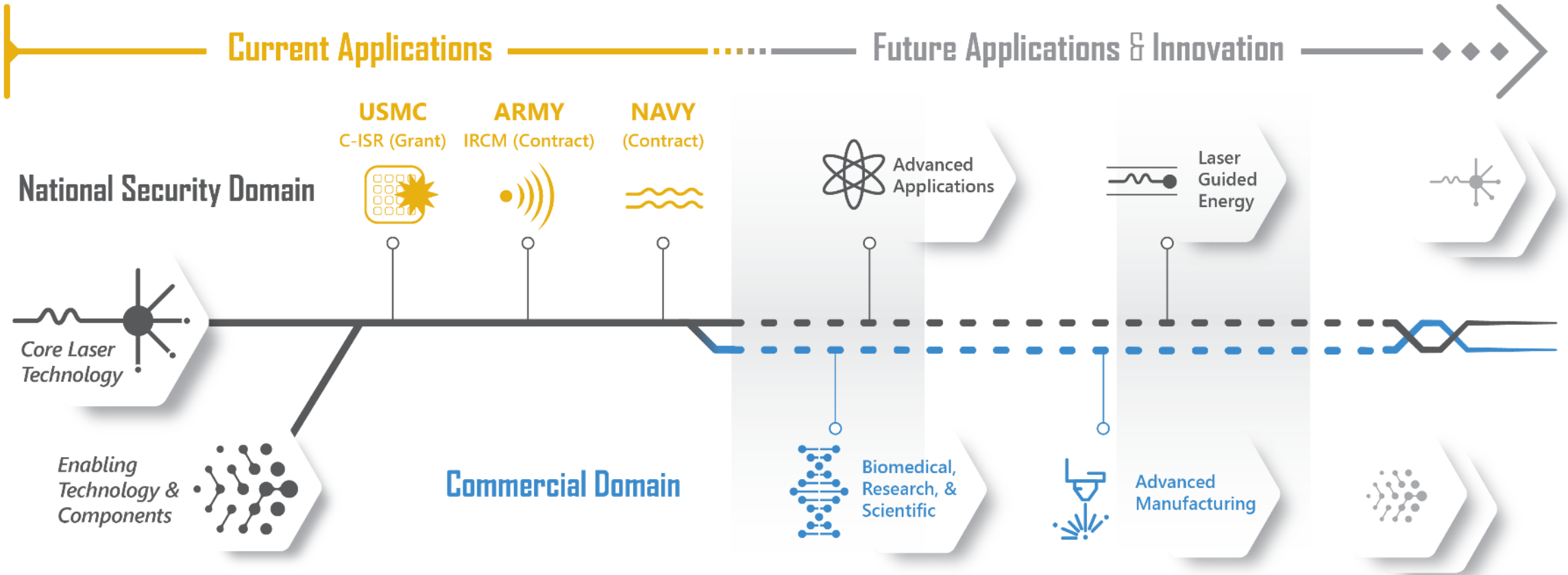
Applied Energetics' corporate headquarters is in the University of Arizona Tech Park.

Facility Characteristics

- 21,300 sq ft. facility
- 4,830 sq ft. Class 1000 Cleanroom
- Multiple integrated laser labs
- Secure server room with network capability
- Shop assembly area (outside of cleanroom)
- Dedicated inventory, shipping and receiving areas
- ITAR, DCSA, and NIST compliant



AE Our Progress



Large Addressable Markets

National Security Domain



Directed energy weapons market expected to grow from \$6.2 billion in 2022 to \$17.8 billion in 2028, a CAGR of 19.2%

Directed Energy Weapons Market, Research and Markets, January 2023, <https://www.researchandmarkets.com/reports/5732454/directed-energy-weapons-market-global-industry#tag-pos-3>



Counter UAS market expected to grow from \$1.7 billion in 2021 to \$6.8 billion in 2030, a CAGR of 17.0%

Global Counter UAS System Market, Research and Markets, December 2022, <https://www.researchandmarkets.com/report/counter-uas#tag-pos-1>



Directed Infrared Counter Measures market expected to be worth \$10 billion over the next 10 years

Airborne DIRCM & Missile Warning Systems, <https://www.tealgroup.com/index.php/teal-group-media-news-briefs-2/teal-group-news-media/item/airborne-dircm-missile-warning-systems-will-northrop-s-circm-dominate-a-10-billion-market-as-laircm-did>

Commercial Domain



Commercial ultrashort pulse laser market expected to grow from \$1.5 billion in 2020 to \$5.2 billion by 2030, a CAGR of 15.0%

Ultrafast Lasers Market, 2021, <https://www.alliedmarketresearch.com/ultrafast-lasers-market-A12544>



Additive manufacturing market expected to grow from \$15 billion 2022 to \$95.6 billion by 2032, a CAGR of 20.4%

Additive Manufacturing, 2023, <https://www.precedenceresearch.com/additive-manufacturing-market>



Medical laser market expected to grow from \$5.6 billion 2022 to \$19.9 billion by 2032, a CAGR of 14.5%

Medical Laser Market, 2023, <https://www.precedenceresearch.com/medical-laser-market>



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Thank you

Investor Relations Contact

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