*Report May 15, 2025*

**Summary:**

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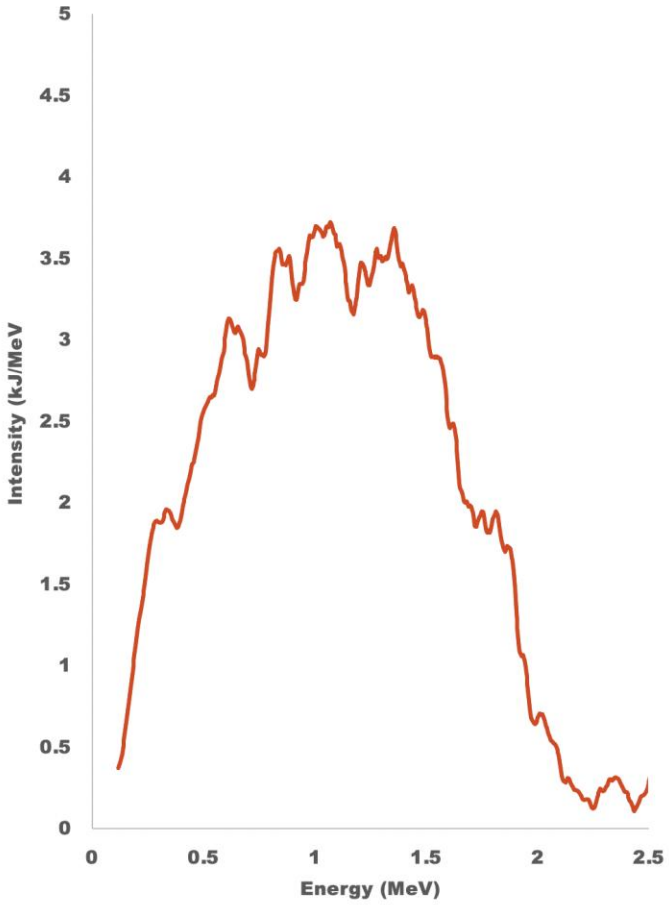
# New Records for Deuterium Fusion Yields, Beam and Plasmoid Energy

We've finally, after 9 years, got new yield records for deuterium. Not for a single shot, but for the more scientifically significant average of 2, 3 and 4 consecutive shots with the same conditions, and for all shots with the same conditions. We also have new records for total ion beam and plasmoid energy.

The increase in yield is  not breakthrough-level—it's only 10%, thus lifting the best two-shot yield to 0.21 J from 0.19 J achieved back in 2016. But the new results are significant in confirming that the older results are repeatable with our present device. Indeed, the variance of the yield—a measure of how much yield changes from shot to shot—also got better dropping from 33% to 26%. **They remain the best results of any private fusion company for "wall-plug efficiency"—the critical ratio of fusion energy out to total energy into a device.**

In addition, the new yield results have confirmed the predictions of our theory. Now that we have taken into account the limits imposed by the current in the filaments and the limits on total pressure of deuterium, these new, repeatable results are almost identical to our predictions. This gives us confidence that the far higher yield we predict for our hydrogen-boron shots will also be confirmed be near-future experiments. (More on boron soon!)

The increase in beam and plasmoid energy is greater than that for yield, **doubling to about 8 kJ from the 4 kJ** we've achieved several times since back in 2013. In at least one shot that we've analyzed, shot 3, April 3rd, we were able to confirm the beam energy with two instruments. Our "Upper Rogowski Coil" measures the current in the beam directly and the energy in each ion by the time it takes the ions to arrive. The faster the ions, the more their energy. This was confirmed by the gamma ray spectrometer that sits under the end of our drift tube. The beam produces the gamma rays when it smashes into the steel plate at the end of the drift tube. From the amount and energy of the gamma rays we can calculate the total energy in the beam. The two instruments agreed on both total energy and energy per ion.




*Ion energy spectrum of a record 8 kJ ion beam, based on gamma ray spectrometer data.*

The 7-8 kJ we measured is about 18% of the total energy in the device at the time the plasmoid forms—a significant advance in energy efficiency. We expected this, because we've increased the current by 50% with our dual switches and the energy efficiency should go up as the square of the current. Again, this confirmation of our theoretical predictions helps pave the way for successful boron shots—coming soon!

The deuterium shots have been taken as cleaning shots between boron shots—the pure deuterium shots that are themselves taken after deuterium-nitrogen mix shots are the ones that are generating record yields.

# Wefunder Approaches $100,000, Needs to Go Faster

Our 2025 Wefunder campaign is closing in on our second goal of $100,000 with just over $5,000 to go. But we were trying to reach this goal by April 18th, so we're more than 3 weeks late. This makes a difference—we need to raise money faster than we spend it on our research, so making goals on time is important. To keep our rapid progress toward cheap, clean safe unlimited fusion energy, help us get us over the top of this goal and on to the next!

# LPPFusion Research Gets New Public Notice

LPPFusion's public profile has continued to rise this month, with three new reports on our work. Demystify Science has just released a new podcast interview with LPPFusion Chief Scientist Eric Lerner on the history of the plasma physics that underlies fusion energy work and the nature of the scientific method. The conversation dives deeply (three hours) into the history and foundations of plasma science, from early Birkeland current experiments in the Arctic that revealed the electrical nature of the aurora, to the role of plasma dynamics in the shape and behavior of galaxies, to the filamentary plasma structures and cosmic-scale currents that contradict the standard Big Bang model. This is a deep exploration of plasma cosmology theories, and the scientists behind them — such as Birkeland and Hannes Alfven — who pioneered plasma physics by looking at the universe.

*Dr. Anastasia Bendebury and Dr. Michael Shilo DeLay interview LPPFusion's Lerner on the Demystify Science podcast April 20, 2025*

Future Publishing has placed an interview with LPPFusion Chief Scientist Eric Lerner on their news page. This is an international open-access publisher that publishes academic journals, magazines, online databases, and services in science. Future Publishing's editor, Dr. Ehsan Hosseini, Professor of Mechanical Engineering at Arkansas Tech University (ATU), met Lerner at the Future Energy Summit in Newton, MA in February and proposed the interview. In the interview, Lerner update readers on the current status of our efforts to get to proton-boron (pB11) fusion as a complete replacement for fossil fuels. This report was also re-posted on the Fusion Industry Association news page.

We are now recommended as a sustainable investment opportunity by dots.eco

# Fuse, Baby, Fuse—Fusion vs Chaos

With trade-war uncertainties and bonds sell offs in the midst of an erratic global gamble, it seems that America is leading in manufacturing global Artificial Chaos, not AI.

Should anyone really be surprised? Is this chaos actually new, or just sped-up? After all, look at how global energy pricing has been gamed for decades with artificial oil/gas supply shortages orchestrated to assure the maximum profitability of the giant energy companies, benefiting mainly  a few thousand billionaires. Today, trillions of dollars flow from all of us to the oil and gas companies and through them, to a handful of financial institutions and the mega-shareholders who control both, as we detailed in an LPPFusion video in 2021.

Since the start of the year oil prices have plunged, along with the stock and bond markets, by 26%. Good news for gasoline and everything energy goes into? Not really, because producers will just cut back production to reflate prices. Indeed, big OPEC producers, especially Saudia Arabia, are publicly saying that production increases and price cuts are aimed at "disciplining" smaller member nations who overproduce their quotas, so that future **production cuts can be enforced, to again prop up oil prices.**

A few months ago, oil producers were already complaining of prices too low for production. "Oil and gas producers in the US will not raise output significantly in the coming years" Oil Price wrote: "We're not going to see anybody in 'drill, baby, drill' mode," ExxonMobil Upstream President Liam Mallon said at the Energy Intelligence Forum conference in London, (Reuters).

While it has been shown that there is enough oil for at least the next 100 years, fossil fuel companies now prefer to not really drill that much, if at all. It's much more profitable to just keep the prices higher, and supply tight.

So, if the chaos continues, as many think it will, we can look for a "rescue" of oil prices, like the one in 2020, when markets again were tanking and a massive reduction in production and rise in prices was brokered between Russia and Saudi Arabia by none other than President Trump. Will the slogan then be "don't drill, please, don't drill"?


*This chart of oil prices since 2012 shows that price dips, like that in 2020, are always followed by massive rises as production is curtailed. In only a year, by 2021, prices were above pre—pandemic levels and by 2022, they were double that.*

There is an alternative to all this chaos: Fuse, baby, fuse!

With cheap, abundant and virtually limitless fusion energy, the artificial high pricing of energy, and artificially-made shortages will be a thing of the past. With fusion energy, we can eliminate pollution and raise the standard of living for all. When energy is cheap, everything else is cheap. Abundant energy can make everything abundant and eliminate the basis for a financial system based on scarcity.

# Pro-Fusion Law Passes In NJ

The Garden State Times reported in February that The Senate Environment and Energy Committee has given its approval to fusion energy legislation, S-364, which was introduced by Senator Joe Pennacchio (R-26). This bill aims to permit fusion energy projects to access funding from New Jersey's Clean Energy Fund. On Feb. 25, the NJ Senate **unanimously** passed this bill and sent it to the Assembly.

Senator Pennacchio stated, "Fusion energy is no longer just a theory on a whiteboard—continued breakthroughs are happening at a rapid rate, taking immense strides toward becoming a reality. A zero-carbon, sustainable future is within reach, and this bill will help direct critical funds to the research and development of this revolutionary

energy source. By classifying fusion energy as a Class I renewable and allowing investments to be made, New Jersey is positioning itself to be a global leader in fusion technology, helping restore America's energy dominance once again."

The classification of fusion energy as a **Class I renewable** will make it eligible for financial support from the Clean Energy Fund.

*NJ Senator Joe Pennacchio*

It's great to have a senator fighting for fusion - great step for humanity, and we're lucky to be in a state of NJ. So far though, we failed to notice any fusion companies on the Clean Energy Fund list. Until we get connected with the Clean Energy Fund, we're still counting on your desire to change this crazy world for the better.

# Latest Videos on Fusion, Cosmology

We have a new batch of videos this month. LPPFusion President and Chief Scientist Eric Lerner shares his concerns about the threats to scientific research, including that which supports fusion energy, in the Draconian 50% cuts proposed in the new US Federal budget, and the threats to our basic freedoms to protest in Science, Fusion and Freedom. We have a video version of our report on new records for fusion yield. We wind up our coverage of the discoveries in 2024 that invalidate the Big Bang hypothesis in The Impossible Big Bang, where we look at galaxies that would be impossible if the expanding universe hypothesis were right.

Our third episode in the Cosmic Evolution (Physics of Evolution) series summarizes the observational evidence for the plasma theories of the origin of structures in the universe, and the connection with our current fusion energy work. Finally, we're still looking for a technician, so we've made a video about that, too.