

US Stock Express

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UNIVERSITY OF
CAMBRIDGE

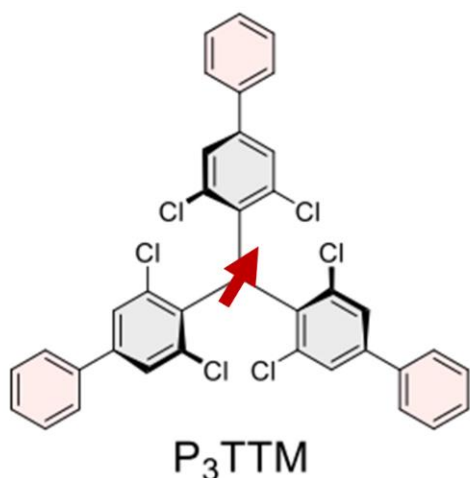
Cavendish Laboratory
Department of Physics

“We are not just improving old designs. We are writing a new chapter in the textbook, showing that organic materials are able to generate charges all by themselves.”

Hugo Bronstein

[New organic molecule set to transform solar energy harvesting](#) | [Cavendish Laboratory Department of Physics](#)

Important Announcement



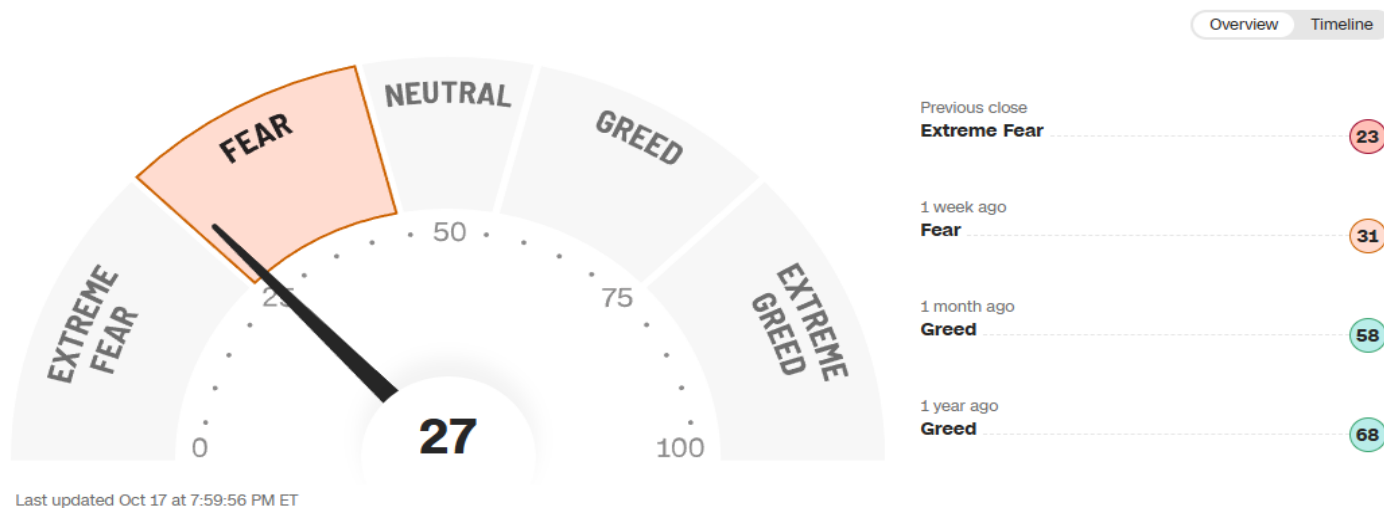
On October 1, 2025, University of Cambridge announced their lab successfully developed P₃TTM which can change light 100% into electricity. This means there is no need for power plants to generate electricity in the future, all nuclear and traditional electric plants will be closed, no need for water-dam to generate electricity any more. Instead, every house or flat, every car just put on P₃TTM on their outer side can have abundant supply of electricity. It will be as free as water and air, everyone no matter private or enterprises can use it freely.

So, let's see the elaboration of GPT-5 and Grok, and see how it changes the world of today.

*Risk disclosure: Price can go up and down at any moment, use free money to trade and bear the risk according to your own capital;
 Never trade with money that has a deadline for withdrawal.
 All suggestions are for reference only, even AI cannot be 100% reliable, final decision still lies upon investors.
 Copy trading cannot replicate another trader's background or psychological state.*

What emotion is driving the market now?

[Learn more about the index](#)



North East West South is NEWS

The United States and the United Kingdom recently launched a joint large-scale investigation operation to crack down on the Prince Group, a major telecommunications fraud syndicate entrenched in Cambodia, freeze more than \$1 billion in assets and impose severe sanctions on the group's core personnel and related enterprises. The incident is considered one of the largest crackdowns on "pig-killing plate" fraud in history. The group's chairman, Chen Zhihe, is still at large and faces a number of serious criminal charges.

U.S. President Donald Trump met with Ukrainian President Volodymyr Zelenskyy, who said Russia wanted an end to the war in Ukraine, but he believed Moscow intended to continue its invasion campaign.

The operating principles of generative artificial intelligence (AI) are often explained in metaphors, and the text calculator metaphor promoted by OpenAI CEO Sam Altman has attracted much attention, comparing AI tools to calculators to highlight their ability to efficiently process linguistic numbers. Yet the metaphor is not perfect, with criticism that it or masks AI's biases, errors and ethical challenges. How does generative AI simulate human language? The rules behind it are worth exploring.

China and the United States today agreed to a new round of trade talks next week, as the world's two largest economies are trying to avoid another tariff dispute at the expense of others. Trump also warned at the time that he could cancel a meeting with Chinese President Xi Jinping during the Asia-Pacific Economic Cooperation (APEC) summit in South Korea at the end of this month if the situation worsens.

The three major Japanese banks, MUFG Bank, Sumitomo Mitsui Banking Corp. and Mizuho Bank, will jointly issue stablecoins to promote payment settlements with pegged cryptocurrencies.

This is a fascinating and very big-picture question. Let's break it down step by step, because the Cambridge discovery of **P3TTM** is indeed being described as a potential revolution in energy science.



GPT-5 is here - OpenAI

⚡ How P3TTM Works

- **The material:** P3TTM is an *organic semiconductor* with a special property — it contains a single unpaired electron (a radical).
- **The breakthrough:** Normally, organic materials are inefficient at converting light into electricity. But Cambridge researchers discovered a **hidden quantum effect** that allows P3TTM to mimic the behavior of inorganic semiconductors, enabling near-perfect conversion of photons into electrical current. ¹ ²
- **Why it matters:** This could lead to ultra-light, single-material solar panels that are cheaper, simpler, and potentially far more efficient than today's silicon-based photovoltaics.



Timeline for Commercialization

- **Fast-track estimate:** 7–10 years (so around 2032–2035) if scaling, stability, and manufacturing challenges are solved quickly.
- **Conservative estimate:** 15 years (around 2040) is realistic, because:
 - Lab breakthroughs often face hurdles in durability, cost, and mass production.
 - Regulatory approval, infrastructure adaptation, and supply chains take time.
- **My take:** The conservative timeline is more likely. Even if the physics is sound, scaling to global deployment is never instant.

Societal & Economic Impacts



GPT-5 is here - OpenAI

1. Energy Infrastructure

- Traditional power plants (coal, gas, nuclear, hydro) would gradually lose relevance.
- Governments may still build some plants for *strategic, employment, or grid-stability reasons*, but investment will decline.
- Energy independence becomes possible at the household or vehicle level.

2. Stock Market Impacts

- **Utilities & Power Producers:** Defensive utility stocks (especially in Asia) may lose their "safe haven" status as demand for centralized electricity falls.
- **Winners:**
 - **Solar & materials companies** that license or manufacture P3TTM.
 - **Battery/storage companies** (Tesla, CATL, BYD) — because distributed generation still needs storage.
 - **Electronics & semiconductor firms** that integrate P3TTM into devices.
- **Losers:**
 - Traditional utilities (CLP, KEPCO, NTPC, etc.).
 - Coal, gas, and uranium miners.
 - Large dam/nuclear construction firms.

3. Crypto & Bitcoin

- Mining costs are dominated by electricity. If electricity becomes nearly free:
 - Mining becomes cheaper → more miners enter → network difficulty rises.
 - Profit margins may not improve much, but **Bitcoin's security and decentralization would strengthen**.
 - Other energy-intensive cryptos (Ethereum Classic, etc.) would also be affected.

4. Employment

- Job losses in traditional power generation, coal mining, nuclear engineering, and dam construction.
- Job creation in advanced materials, solar manufacturing, installation, and recycling.
- Net effect: **disruption**, with retraining needed.



When Will Effects Be Felt?



GPT-5 is here - OpenAI

- **Short term (2025–2035):** Stock markets will treat this as *speculative*. Utilities remain defensive until commercialization is proven.
- **Medium term (2035–2040):** Early adoption in niche markets (space, military, luxury EVs, remote areas).
- **Long term (post-2040):** Widespread disruption of energy markets, utilities, and industrial costs.



Guidance for Small Investors

- **Don't panic-sell utilities yet** — they will remain profitable for at least 10–15 years.
- **Watch for early movers:** Companies that partner with Cambridge or license P3TTM tech.
- **Diversify into enablers:**
 - Battery/storage firms
 - Semiconductor/materials innovators
 - Crypto infrastructure (exchanges, mining equipment)
- **Be cautious of hype:** Many “miracle energy” discoveries never scale. Wait for pilot projects and industrial adoption before making big bets.

👉 In short: P3TTM could be the most disruptive energy technology since the steam engine, but the *financial impact will be gradual*. For now, utilities remain defensive, but by the 2030s–2040s, the winners will be companies that adapt to a decentralized, ultra-cheap energy world.

Would you like me to sketch out a **sector-by-sector “winners vs losers” table** for the next 15 years, so you can see where the risks and opportunities lie most clearly?



Grok - xAI The
World's Most Powerful AI

How P3TTM Works

P3TTM (poly(3-(2,2,6,6-tetramethylpiperidin-1-yl)thiophene), a spin-radical organic semiconductor molecule developed at the University of Cambridge's Cavendish Laboratory, leverages a quantum mechanical effect rooted in Mott-Hubbard physics to achieve near-perfect charge collection efficiency in solar cells. At its core is a single unpaired electron, which gives the molecule unique magnetic and electronic properties. When P3TTM molecules are in close contact, their unpaired electrons interact, aligning in an alternating up-down pattern, creating a Mott-Hubbard insulator state. phy.cam.ac.uk

Here's the basic mechanism:

- **Light Absorption:** A photon hits a P3TTM molecule, exciting an electron.
- **Charge Separation:** The excited electron "hops" to a neighboring identical molecule, driven by electrostatic energy (Hubbard U), creating a positive charge (hole) on the original molecule and a negative charge on the neighbor. This happens intrinsically within the single material, without needing separate donor-acceptor interfaces like in traditional organic solar cells.
- **Charge Extraction:** These separated charges can then be collected as electrical current with close-to-100% efficiency, meaning almost every absorbed photon results in usable electricity.

This differs from conventional solar cells, where charge separation often occurs at material interfaces, leading to energy losses. P3TTM's single-material approach could enable simpler, cheaper, and lighter solar panels. Note that while charge collection is near-perfect, overall light-to-electricity conversion efficiency still depends on factors like absorption spectrum and thermodynamic limits (e.g., Shockley-Queisser limit for single-junction cells is around 33%), but this breakthrough minimizes internal losses. phy.cam.ac.uk

Timeline for Mass Production and Commercial Use

There are no official timelines from the University of Cambridge or related publications for P3TTM's commercialization or mass production, as the discovery is in the early research stage (lab demonstrations only). Breakthroughs like this typically take 5-15 years to move from lab to market, depending on scaling challenges, manufacturing processes, regulatory approvals, and investment. phy.cam.ac.uk

- **Fastest Scenario (7-10 Years):** If partnerships with industry (e.g., solar manufacturers) accelerate development, pilot production could start in 5-7 years, with commercial rollout by 2032-2035. This assumes rapid optimization of the molecule's tunability for real-world applications.
- **Conservative Scenario (15 Years):** Accounting for hurdles like material stability, large-scale synthesis, integration into panels, and cost reduction, it could take until 2040. Historical examples include perovskite solar cells, discovered in 2009 but still not fully commercialized by 2025.

I agree with the 7-15 year span you mentioned (latest 2040), as it aligns with general tech adoption curves for advanced materials. Effects might emerge sooner in niche applications (e.g., flexible electronics) before full mass adoption.





Grok - xAI The
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Impact on Modern Society

If P3TTM enables ubiquitous, ultra-efficient solar energy as you describe—potentially making centralized power plants obsolete—it could fundamentally reshape infrastructure, economics, and geopolitics. However, solar's intermittency (night/clouds) would still require energy storage (batteries, hydrogen), grid upgrades, and backup systems, so a full phase-out of nuclear, hydro, or fossil plants isn't immediate or total. Assuming your scenario of decentralized, self-sufficient energy (e.g., every home/car with P3TTM panels), key impacts include:

- **Infrastructure Investment:** Reduced need for new large-scale plants or dams. Governments might pivot from nuclear showcases or dam projects (e.g., for employment during recessions) to solar incentives, smart grids, and storage. This could slow global energy infrastructure spending by 20–50% in the next 15 years, redirecting funds to AI, biotech, or climate adaptation.
- **Energy Independence:** Households and industries generate power locally, slashing bills (potentially to near-zero marginal cost) and reducing reliance on utilities or imports. This boosts resilience but challenges grid stability without advanced management.
- **Geopolitical Shifts:** Oil-exporting nations (e.g., Saudi Arabia, Russia) face economic pressure; renewable leaders (e.g., China in solar manufacturing) gain. Unemployment in traditional energy could rise, but new jobs in solar fabrication, installation, and maintenance emerge.

Effects would roll out gradually: stock market reactions within months of commercialization announcements, infrastructure shifts in 5–10 years, full societal transformation by 2040+.





Grok - xAI

The World's Most Powerful AI

Impact on the Stock Market

In your scenario, where electricity becomes decentralized and ultra-cheap, traditional energy sectors face disruption, while renewables and efficiency plays boom. Asian markets, where utilities are defensive staples (e.g., due to stable dividends in recessions), could see volatility as demand for grid power wanes. Overall, the market might reprice energy-related assets downward initially (fear of obsolescence), then stabilize as adapters thrive. Here's a breakdown:

Sector/Stock Type	Potential Impact	Examples of Affected Stocks	Rationale
Traditional Utilities & Power Generation	Negative (20-50% valuation drop over 5-10 years)	Duke Energy (DUK), Southern Company (SO), China Yangtze Power (600900.SS), Tokyo Electric Power (9501.T)	As defensive stocks, they rely on regulated monopolies and steady demand. Decentralized solar erodes this, turning electricity into a commodity. Asian utilities (e.g., in Japan, China) could suffer most if seen as "old economy."
Fossil Fuels (Oil, Gas, Coal)	Strongly Negative (30-60% drop)	ExxonMobil (XOM), Chevron (CVX), Peabody Energy (BTU), Coal India (COALINDIA.NS)	Plunging electricity costs accelerate EV adoption and industrial electrification, reducing fossil demand. Coal/nuclear plants close faster.
Nuclear & Hydro Infrastructure	Negative (15-40% drop)	Cameco (CCJ), Orano (formerly Areva), China National Nuclear Power (601985.SS)	Nuclear as a tech symbol loses appeal; hydro dams for jobs become irrelevant. Existing assets may be stranded.
Renewable Energy & Solar	Mixed/Positive (20-100% upside)	First Solar (FSLR), Enphase Energy (ENPH), Longi Green Energy (601012.SS), JinkoSolar (JKS)	Initial boost from hype, but if P3TTM is easy/cheap to produce, it disrupts existing silicon-based solar firms. Winners: those licensing/adopting the tech.
Energy Storage & Grids	Strongly Positive (50-200% upside)	Tesla (TSLA, batteries), Contemporary Amperex Technology (300750.SZ), Fluence Energy (FLNC)	Solar surge demands storage for intermittency; smart grid firms thrive.
Efficiency & Related Tech	Positive (30-80% upside)	Schneider Electric (SU.PA), Siemens Energy (ENR.DE), ABB (ABBN.S)	Cheaper power enables energy-intensive industries; efficiency tools (e.g., smart home) boom.

Market effects could start immediately upon credible scaling news (e.g., 2026-2028 partnerships), with full repricing by 2035 as adoption grows. Volatility spikes in bear markets, as utilities lose defensive status.



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Impact on Crypto Markets

Lower electricity costs would broadly benefit crypto, especially proof-of-work networks like Bitcoin, where energy is 50–70% of mining costs. This could:

- **Boost Profitability:** Miners' margins rise, potentially increasing hash rates and network security. Bitcoin mining might shift to solar-rich areas, reducing carbon footprint.
- **Price Effects:** Short-term BTC/ETH rallies (10–30%) on cost-cut news, but long-term, easier mining could lead to more supply (if difficulty adjusts slowly) or attract new entrants, pressuring prices. Overall positive, as cheaper energy lowers barriers, potentially adding \$100–500B to crypto market cap by 2040.
- **Broader Crypto Ecosystem:** Energy-intensive DeFi/NFT projects gain; "green crypto" narratives strengthen. No major unemployment in crypto, but traditional miners without solar access could consolidate.

Effects emerge 3–7 years post-commercialization (e.g., 2030+), as cheap solar scales.

Unemployment in the Electricity Industry

Yes, significant: 10–30% job losses in traditional sectors (e.g., 1–2 million globally in coal/nuclear/utilities by 2040), including plant operators, miners, and engineers. However, transitions create jobs in solar installation (potentially 5–10 million new roles), storage, and R&D. Effects start in 5–10 years with plant closures, peaking by 2035. Governments could mitigate via retraining (e.g., from nuclear to solar tech).

Advice for Small/Retail Investors

- **Diversify Away from Traditionals:** Reduce exposure to fossil/nuclear/utilities; sell or hedge if holding (e.g., via puts on XOM or DUK).
- **Invest in Winners:** Allocate to storage (TSLA, CATL), efficient solar adapters (FSLR), and broad renewables ETFs (e.g., ICLN, TAN). Consider crypto if bullish on cost cuts (BTC/ETH via ETFs like BITO).
- **Monitor Milestones:** Watch for P3TTM partnerships/news; effects are gradual—don't panic-sell. Use dollar-cost averaging into growth areas.
- **Risk Management:** This is speculative; energy transitions are slow. Balance with non-energy assets (tech, healthcare) for stability. Consult a financial advisor for personalized moves.



World Observation

Day 1335
Russia/Ukraine Conflict

Important Announcement P₃TTM

Mind that this is an important announcement of energy science, a potential revolution is oncoming. Now it is on the first stage of laboratory success, still have a lot of blockages to overcome in the future before mass production for commercial usage. The first advice of AI is *do not have panic selling* on diminishing stocks, but it also implies you can buy at low on profitable stocks when you think the time has come. Anyway, its impact would not be less than Stargate Project or Artemis Mars Landing Project.

Basically, the generation of electricity now comes from hydro power, coal power and nuclear power. They are public utilities own by government and individual citizens can hardly generate on their own. The transmission from one province to another province would also have certain loss of electricity. The successful development of the Cambridge Lab means every individual can generate electricity on their own. So, they shouldn't be afraid of the electric company increasing their fee every now and then. No need to be controlled by others, and the cost would be as low as water and air.

However, in what form the P₃TTM will appear? In form of a plate or coating or whatsoever? Too early to talk about now. How to install it, or just buy back from the supermarket and place on the window can use it? Not yet confirmed or announced. Don't worry, if Cambridge can do this, other famous university can also have their development for competition soon. May be another style will come out not so far. Or other emerging economies would try to steal the intellectual property, it has already been happened before. Anyway, before comprehensively used, it needs to be passed by law and by-law for details. Therefore, it takes time.

We also have to know the duration, if we purchase such an installation, how long can it last, do we need to renew every now and then, would it have new version like the iPhone and we need to upgrade every year? Would it have harmful side effect, like those people dislike or competitors would say it may cause cancer, AIDS or even COVID-19?

Anyway, the construction of dam for hydro-electric power will not be seen again. In the 1930 Great Recession, such constructions were used to improve unemployment and later on used by a lot of countries to do so. The construction of nuclear electricity is also used to prove the technology advancement of a country, and they would be called for a halt soon. Henceforward, people would not like to invest in infrastructure of electric plants that need 20 to 30 years to get back the cost. Only will do it for short term purpose.

In a lot of Asian markets, electricity company stocks belong to public utilities which are known as defensive stocks. That is, they have strong anti-falling power, for even in a recession or bear market, the demand is quite stable. These stocks are normally held by pension fund and pensioners. The mining of Bitcoin also will use large amount of electricity; therefore, more people can join the mining in a lower cost. Anyway, the scenario will be changed, but will be gradually.

We have to prepare well for it. A smart investor should learn from Warren Buffet that he is always running ahead of the era. Why he can always have a profit of 3000% to 4000%? For he can buy at low, and buy before the trend starts. He can have an early eyesight and discover stars of tomorrow. Such as the AI trend is in furious now and people can hardly buy AI stocks at low. Or should prepare for Mars Landing stocks before everyone is talking in the metro or online, or in McDonald. It's the same for P3TTM. So, KEEP CALM AND CARRY ON! Go ahead to the Market Observation now!



S&P is going up month by month without adjustment since April 7.



Beaver Moon on November 5 is known as Super Full Moon 2025 which will bring a happy ending of the turmoil year.



Market Observation

Awaited with Longing
4 major waiting

Bitcoin

\$107,159.50

Since the previous Friday Trump announced the 100% tariff, the US stocks market dropped for a single day and kept on stable running horizontally. No more extra high or low, just running sluggishly in narrow range.

Both China and US have cooled down the scene and agreed to begin another round of talk. US disclosed a lot of strategies, the latest is that if China keeps on control of rare earth, they can drive out all Chinese students in US. Of course, they won't do that. Now even the population of India has already surpassed China, but the greatest number of students still comes from China. Meanwhile, once US also threatened to stop the using of swift code of China and stop supplying parts of 1900 Boeing planes in China.

So, if you believe compromise will come or at least have a grace period for deadline of 60 or 90 days can buy in now. What will happen after the grace period? Will it need to have another threat or control? If you think they will de-couple, just sell at once.

One thing that a lot of people still waiting, but seemed forgotten, that is the war in Ukraine. Today the war had been broken out for 1335 days. Donald Trump said he could stop the war within 24 hours, later on said 100 days. Putin initially said he could win the war in 48 hours. No one can fulfill their promise. After a telephone talk of 2.5 hours, Trump said that he would have a meeting with Putin in Budapest, Hungary within 2 weeks. Thus, Trump halted the supply of Tomahawk missile for it can make Ukraine attack any target in Moscow. It makes all officials including Putin has to hide themselves in air raid shelves all the day.

Russia is greatly exhausted now, why Putin still can bear? It is because China gives financial support and some mercenary, including other low-level support. China does not want Russia being defeated or else the western power will grow bigger. They also afraid of further sanction so no direct high-level supports like weapons. China still wants the peace talk to be led by China and not the west.

The third major waiting of investors is a healthy adjustment of the market. Since the rebound on April, there is no major adjustment. Basically, the market is growing in a level higher than previous month after that. There is no golden pit, for people would buy at low for any drop, and Trump also afraid of the market would drop too much. Actually, if there is a drop of 10%-20%, it is also considered normal, so the selling orders can be digested and thus provide further room for rising. Even a short bear market of 20% drop would not be considered harmful, but still yet not come. So, what we can do now is to wait!

The fourth waiting is the shut down of government. From past experience, we can know that it is not a major factor of the market, but at least medium to major. This is a block for rising even not so great, but we must clear it up in order to see the blue sky and white cloud surrounding the sun.

So, what would happen on or before the Beaver Moon of November 5th? The last action of US is that they can block the sea route of Malacca Strait to cut the supply of petroleum from Middle East to China. This would push decoupling of US and China at once. Even though US has a lot of detrimental methods, they dare not to use. They have to face votes and feeling of citizens and China needs not. The supreme leader in China is all in all. Therefore, within 3-8 years US will do anything to get the release of rare earth from China, which means must knee down unless they want to start a war. Trump is very afraid of the falling of Dow Jones, China surely can realize this.

For stock investors, no need to worry. Study the recommendations of AI in the past week. Just try to buy at low, buy stars of tomorrow no matter for Artemis, Stargate or P3TTM Project or.....