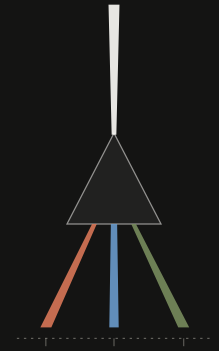


INFLECTION.

THE WEEKLY MAGAZINE OF INNOVATION



ISSUE 02 · FRIDAY, JULY 3 2026 · DEEP DIVE — THE ENERGY WALL

THE WEEK COMPUTE HIT A WALL MADE OF WATTS

AI's Real Constraint Isn't Compute. It's *Electricity*.

This week a nation pledged \$649 billion to “chips” — and buried in the fine print was a ten-gigawatt power plan. Days later, a fusion company with no revenue went public as AI infrastructure. Both moves look like category errors. Both are the market repricing intelligence in *joules*.

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- Why Seoul's chip plan is really a power grab / p.03
 - The Contrarian: fusion won't save you in time / p.06
 - Signals: CRISPR's one-shot cure, humanoids clock in / p.07

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DISPATCH

Compute has a body,
and the body has to eat.

For three years the industry counted its power in FLOPs. The scoreboard was silicon: who had the most chips, the biggest cluster, the best model. This week the scoreboard quietly changed its units.

On Monday, Seoul committed \$649 billion to what the wires called a semiconductor plan. Two days later a pre-revenue fusion outfit filed to go public as “AI infrastructure.” Read together, the two say the same thing: the scarce input is no longer the transistor. It is the electron.

So the lens for this issue is simple. Intelligence is thermodynamic. Every token you read cost heat; every model runs on a bill denominated in megawatt-hours. When the binding constraint slides from the chip to the grid, the winners change — and the strange purchases start to make sense. This is that handoff, caught in the act.

— THE EDITORS

The Thermodynamic Turn

For three years, the race for artificial intelligence was a race for silicon. This week, in two announcements that looked unrelated, it changed its unit of measure — from computation to power.

BY THE INFLECTION DESK · FRIDAY, JULY 3, 2026

For most of the deep-learning era, one question organized the flow of hundreds of billions of dollars: *who has the most compute?* The scarce resource was silicon — GPUs, high-bandwidth memory, a single foundry in Taiwan. Win the chips and you win the models. This week, the industry began to admit that the story has changed underneath it. The chips are no longer the wall. The wall is the power to run them.

The tax you cannot optimize away

Start with the physics no one can engineer around. A modern AI cluster is, in the end, a machine for turning electricity into heat and arithmetic. The arithmetic is the product; the heat is the tax. And the tax is now enormous.

The International Energy Agency projects that data-centre electricity demand will more than double by 2030, to roughly 945 terawatt-hours — slightly more than Japan consumes in a year. The AI-optimized slice grows faster still, more than quadrupling over the period. In the United States, data centres are on track to draw more power than the entire heavy-manufacturing base — aluminum, steel, cement, chemicals — combined, and to drive nearly half of all growth in national electricity demand.

Those are not software numbers. They are grid numbers, and the frontier has already crossed into them. xAI's Colossus 2 is scaling toward 2 gigawatts and some 555,000 GPUs. OpenAI's Stargate program has sketched roughly seven gigawatts on the way to ten, with cumulative spend north of \$400 billion. At least five separate 1-gigawatt-plus campuses are expected to switch on this year alone.

For scale: one gigawatt is about a full-size nuclear reactor's output — per building. When a single training campus draws as much power as a mid-size city, the binding constraint stops being the chip and becomes the substation, the transmission queue, and the fuel. That is the wall this issue is named for. And this week, two very different players walked straight into it.

01 The chip plan that was a power plan

On June 29, South Korea's president, Lee Jae-myung, unveiled what the headlines dutifully called a semiconductor package: roughly ₩1,000 trillion — about \$649 billion — of public and private money for chips, AI and robotics. Read the fine print and the framing inverts.

Samsung and SK Hynix anchor the fabs, yes. But the plan's spine is energy and land: a one-gigawatt AI data centre from SK; ₩550 trillion (\$356bn) earmarked for AI data centres by SK, GS and Naver; and a national target of an *additional ten gigawatts* of AI-data-centre capacity by 2035. A country that imports almost all of its primary energy did not, at bottom, announce a chip plan. It announced a plan to manufacture electricity fast enough to feed the chips it already knows how to make.

02 Fusion goes public before it goes on

Forty-eight hours later, the second signal. General Fusion — a magnetized-target company that nearly ran out of cash in 2025 — moved to list on Nasdaq through a blank-cheque merger: a roughly \$920 million enterprise value on a business with no commercial reactor and no revenue.

On its own, one struggling fusion listing is noise. Set beside the rest of the month, it is a pattern. Tennessee's first-in-the-nation fusion rules took effect June 9, clearing Type One Energy's 400-megawatt Infinity Two stellarator near Oak Ridge to seek the country's first fusion licence. The Department of Energy signed off on Xcimer's laser-fusion reference design. Realta unveiled a tandem-mirror plant targeting power below \$50 a megawatt-hour. Capital, law and engineering are being poured into a source that does not yet exist — because the demand curve that will pay for it very much does.

*“A nation that imports nearly all its energy just staked a trillion dollars on **generating** intelligence at home — and the market began pricing fusion plants that haven't been built.”*

03 Even the silicon is speaking watts

The final tell is in the chips themselves. When OpenAI and Broadcom unveiled Jalapeño on June 24 — OpenAI's first custom processor — the headline spec was not peak throughput. It was performance *per watt*, “substantially better than current state-of-the-art.”

The most compute-hungry company on earth designed its first chip around the electricity bill. That is what a repriced industry looks like: when even the buyers of the most GPUs start optimizing for joules, the unit of competition has already changed. The wall is not coming. It is here, and everyone at the frontier is quietly building against it.

What it means for anyone building

If the constraint is power, the org chart of advantage changes. For a decade the scarce hire was the researcher who could squeeze more from a model; the scarce asset was an allocation of GPUs. The next scarce things are unglamorous: an interconnection agreement, a power-purchase contract, a parcel of land near a substation, a permit. Compute is becoming a real-estate-and-energy business wearing a software costume.

Plan in \$/MWh, not \$/GPU-hour. The cost that increasingly dominates a frontier workload is the electricity to run and cool it. Efficiency per watt — not raw speed — is the metric that now compounds.

Treat generation as strategy, not overhead. “Behind-the-meter” power — building your own plant beside your own data centre — is turning into a moat, because it sidesteps a grid that cannot connect new load fast enough.

Respect grid time. Interconnection queues run years, not sprints. That is precisely why a fusion option dated 2035 is being bought in 2026: if AI demand compounds, the cheapest moment to secure a future gigawatt is before everyone agrees they need one.

FIELD NOTES — HOW A FUSION PLANT MAKES ELECTRICITY

- 1 Confine & heat.** Squeeze a hydrogen fuel — deuterium plus tritium — with magnets or lasers until it hits ~100 million °C, hotter than the sun’s core, and the nuclei fuse.
- 2 Catch the heat.** Fusion flings out fast neutrons. They slam into a surrounding “blanket” or liquid wall, and their motion becomes heat.
- 3 Make power.** That heat spins a turbine — or, in mirror designs, converts to electricity more directly — and flows to the grid. Same last step as a coal plant; a radically different fire.

GLOSSARY

LCOE — levelized cost of energy

The all-in price of a megawatt-hour over a plant’s life. The number that decides whether a power source is a business.

Behind-the-meter

Generation built on-site, feeding a facility directly without crossing the public grid — and skipping its queue.

PPA — power-purchase agreement

A long-term contract to buy electricity at a fixed price. Now often the first thing an AI data centre signs.

Stellarator

A twisting magnetic bottle for fusion plasma — harder to build than a tokamak, but stable in continuous operation.

The Move That Looks Like a Mistake

To a sober energy analyst, buying fusion as “AI infrastructure” in 2026 is close to malpractice. Fusion has been twenty years away for sixty years. General Fusion reached for a blank-cheque merger — the financing of last resort — because private capital had cooled. No reactor on any of these roadmaps will deliver a commercial electron before the early-to-mid 2030s, well after the demand spike that is meant to justify it. The honest consensus is not wrong: on a five-year horizon, the AI power wall will be climbed by boring means — gas turbines, solar-plus-storage, refurbished nuclear, and steady gains in performance per watt. Bet on the turbine, not the tokamak.

And yet. *Move 37* — the stone AlphaGo placed on the fifth line that every professional called an error, and that turned out to win the game — was only a mistake if you were counting the next few moves. On a longer board it was optimal. The fusion trade has the same shape. The market is not buying 2026 electricity; it is buying a **call option on 2035 gigawatts**, struck at the price of AI sovereignty. Options are supposed to look overpriced against today’s spot — that premium *is* the cost of optionality.

If frontier demand compounds the way its backers believe, a nation or a hyperscaler with no path to self-generated, carbon-free, multi-gigawatt power will be strategically capped no matter how good its models are. Paying a premium now for a supply that may arrive late is not irrational; it is insurance on the one input you cannot rent at any price if everyone needs it at once.

So the consensus is right about the timeline and may be wrong about the trade. Both can be true. The tell to watch is not whether fusion “works” this decade — it is whether smart money keeps paying option premiums for unbuilt power. This week, it did.

Meanwhile, elsewhere

87%

BIOTECH

The one-shot cure grows up

CRISPR left the lab this week. Intellia's lonvoguran ziclumeran became the first in-vivo gene editor to clear a large, double-blind Phase 3 trial: a single intravenous infusion cut monthly attacks of hereditary angioedema by 87% against placebo — 91% for the moderate-to-severe attacks — across 80 patients, by permanently switching off the *KLKB1* gene inside the liver. One dose, not a lifetime of drugs. A rolling FDA submission is underway; launch could come in 2027. The disease is rare; the template — edit the body's source code once and walk away — is not.

SOURCE — NEW ENGLAND JOURNAL OF MEDICINE; INTELLIA THERAPEUTICS · JUN 13 2026

310/hr

ROBOTICS

Humanoids clock in

The humanoid debate moved from demos to timecards. From June 23–28, AGIBOT's wheeled G2 robots ran an entire quality-inspection section of a tablet production line in China at roughly 310 units an hour, on 18-to-20-second cycles — not a staged clip but sustained factory throughput. Figure's third-generation robot, meanwhile, is now rolling off its own line at about 55 a week. The question is no longer whether humanoids can work, but how fast the factories that build them can scale.

SOURCE — THE ROBOT REPORT · JUNE 2026

9_{mo}

SEMICONDUCTORS

A chip built for the bill

OpenAI shipped a chip. On June 24, OpenAI and Broadcom unveiled Jalapeño, a reticle-sized ASIC built from scratch for LLM inference and taped out in just nine months — a blistering pace for custom silicon. Its marquee number was not raw speed but performance per watt, “substantially better than state-of-the-art.” When the company that consumes the most compute designs its first chip around energy efficiency, it confirms this issue's thesis from the inside: the frontier now competes on joules.

SOURCE — OPENAI / BROADCOM; TECHCRUNCH · JUN 24 2026

BY THE NUMBERS

The week, in the unit that now matters

\$649_B

South Korea's public-private pledge for chips, AI and robotics, unveiled June 29.

10_{GW}

New AI-data-centre capacity Korea aims to add by 2035 — the plan's real payload.

945_{TWh}

Global data-centre electricity projected for 2030 by the IEA — roughly Japan's entire annual use.

2_{GW}

Power draw of xAI's Colossus 2, home to about 555,000 GPUs.

\$920_M

Enterprise value of General Fusion's Nasdaq listing — for a reactor not yet built.

<\$50/_{MWh}

Target power cost of Realta's tandem-mirror fusion design.

87%

Reduction in monthly disease attacks from a single CRISPR infusion — the week's reminder that the physical frontier isn't only about power. It's about editing life itself.

The week intelligence got a body

Step back far enough and the week tells one story with three faces. CRISPR edited the body's source code with a single infusion. A humanoid stood at a real workstation and hit quota. A trillion-dollar chip plan turned out to be a power plan, and a reactor that doesn't exist got an infrastructure price. The common thread is that intelligence — biological, mechanical, artificial — stopped being weightless.

For a decade the exciting frontier was information: bits, weights, tokens, things with no mass and almost no marginal cost. In 2026 the frontier acquired a body. Bodies need atoms, land, permits, and above all energy. That is the deeper meaning of the energy wall. It is not merely a bottleneck to be engineered around; it is the moment the digital economy rejoins the physical one. The scarce inputs of the next decade — gigawatts, interconnects, gene-editing capacity, robot-hours — are all stubbornly material. They obey queue times and thermodynamics, not Moore's Law. Software ate the world; now the world is charging software for the meal.

If there is a lesson for anyone building, it is to respect the handoff. The advantages that compounded in the weightless era — a better model, a cleverer kernel — still matter, but they are increasingly gated by advantages that compound slowly: a signed power contract, a permitted site, a fuel supply. The winners of the next cycle will be the ones who saw, a few years early, that the binding constraint had moved — and who bought the watt while it still looked like a strange thing to buy.

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NEXT ISSUE · FRIDAY

THE LENS

*If intelligence is now measured in watts,
who owns the watts?*



Researched, written & designed with Claude.

Typeset in Poppins & Lora on the Anthropic palette.

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