$600 to Capture Carbon, $7 to Destroy Methane

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The AI boom is summoning coal back from retirement on three continents. The carbon gets counted. The methane that comes with it does not — and it is the cheapest thing on the table to fix.

In Bristow, Virginia, a woman who moved to the county thirty years ago because it was quiet now sleeps badly. The data centre complex near her house runs its load tests around the clock, and the low-frequency hum carries through the windows she paid to soundproof — less a noise in the ears than a vibration in the organs. She told *U.S. News* in April that it "rocks your core," and that the testing triggers anxiety data centres have more than doubled their drinking-water use in four years, and a peer-reviewed assessment of the region's data-centre alley tied the air, water and noise around these sites to raised risks of respiratory and cardiovascular disease.
That is the part of the data-centre story you can see, hear and measure on a water bill. It is real, and it is not the argument here. Because the sound is the part you can hear. The part that you can´t matters,

Photo: Data Centre @Shutterstock

Every new data centre is a power station with a server farm attached. The artificial-intelligence build-out has to land its electricity bill somewhere, and increasingly that somewhere is coal — a retired plant in Nebraska kept breathing past its closure date, eighty-eight gigawatts of new thermal capacity planned across India, a grid in the Chinese interior that the expansion is quietly racing to outrun.

The coverage of all this stops at the smokestack. It counts the carbon dioxide and moves on. What it misses is the gas that never reaches the smokestack at all: the methane vented straight out of the mine that fed the furnace, unburned, eighty-two times more powerful than carbon dioxide over twenty years. That methane is the part of the story nobody is pricing.

It is also the part that is already solved. The machine that destroys it exists, runs hot at the top of mine ventilation shafts, and oxidises up to ninety-nine per cent of the methane passing through it for single dollars a tonne. Not a moonshot. Not a pilot. A ceramic box that has been doing this quietly for years while the climate money chased carbon removal at six hundred dollars a tonne — the same removal Microsoft built into a market and then, this spring, stepped back from without quite saying so.
The question the data-centre era poses is not whether the coal it summons should burn. That is a fight about grids and politics, and it is largely lost. The question is whether the methane that comes with it must vent. On that, the answer is cheap, proven, and waiting for someone to pay for it.

To see why, look at the same collision in three countries.

THE SETUP

One collision, three keys

The United States is the cautionary tale. On the fourth of June, in the Oval Office, the president reached for a war-powers law from 1950 and directed more than seven hundred million federal dollars to coal — to extend the life of thirteen ageing plants, to build two more (the first new American coal plants in thirteen years), and to stand up a West Coast terminal to ship the fuel to Asia. The justification was not climate, nor jobs, nor electricity in the abstract. It was artificial intelligence: coal, the administration argued, is now a matter of national security, because the data centres must be fed. Part of the money was drawn, with some irony, from funds Congress had set aside to capture carbon. The president called it “clean, beautiful coal.”
The coverage did its job on the carbon. Under the headline “Trump Offers Funds for First New U.S. Coal Plants in 13 Years,” the paper of record traced the diverted climate money, the cost to taxpayers, the smog over the plant towns, the plain fact

that coal is the most carbon-intensive fuel there is. What it did not do — not once — was mention methane. A package built to mine, burn and ship more coal, justified by the AI boom, and the single fastest, cheapest lever on its near-term climate harm went unnamed in the reporting and in the announcement alike. That silence is not a gap in this story. It is the story. We put it to the reporters directly. Richard Mattus, lead author of the UN's best-practice guidance on mitigating ventilation air methane and a co-founder of this brief, wrote to them that a coal package cannot be honestly weighed while its largest near-term climate cost is left unsaid.

Beneath the federal headline, the same thing runs plant by plant. Nebraska's North Omaha station was due to close in 2023; when Google and Meta loads spiked nearby, the utility kept its coal units running at least through 2026. In West Virginia, plants slated for retirement are propped up and wired into new transmission. A North Carolina State analysis this spring found data-centre demand could push 2030 power-sector carbon up to twenty-eight per cent higher than a future without it, with coal rebounding to feed northern Virginia. The bills land on households in Bristow; the methane lands in the atmosphere upstream, uncounted in any of it — now with seven hundred million dollars behind it.

China is the avoidance story — by design, if not yet in fact. Most of China's existing data centres sit in the east, where roughly seventy per cent of the power is coal, and coal remains the bedrock that keeps the servers running around the clock. So China is no clean exemplar today. What sets it apart is that it is building the machinery to decouple compute from coal rather than to lock them together. The "East Data West Computing" programme routes new capacity toward the renewable-rich west; national computing hubs now carry a mandate to draw most of their power from renewables; and the country has added more wind and solar in five years than the rest of the world combined, enough that clean generation is on course to overtake coal in the mix around the end of the decade. China is steering the load away from the coal it is so often accused of hoarding. The contrast with Washington is the point: same global force, opposite reflex.

India is where the argument stops being rhetorical. On the first of February, in its annual budget, Delhi offered foreign cloud providers a tax holiday running to 2047 for serving the world from Indian data centres. The money arrived almost before the ink dried — fifteen billion dollars committed by Google, seventeen and a half billion by Microsoft, with capacity set to multiply several times over by 2030. And India has been candid about what will power it. The government is targeting a forty-two per cent rise in coal output by the early 2030s, eighty-eight gigawatts of new thermal capacity, and a coal peak it does not expect before 2040. Roughly seven in ten Indian electrons come from coal today, and that is a deliberate, stated choice.

You cannot tell Delhi to stop. That argument is lost, and arguably it was never the West's to make. But here is what changes the maths: a slice of India's coal comes

from gassy underground mines whose ventilation shafts vent methane that is both intense and, by India's own safety rules, already being measured and drained. It is a minority of the coal and a majority of the mine methane, and it is exactly the kind of emission the cheap machine is built to destroy. So India hands you the lever and the money in the same place, at the same time: a wall of footloose hyperscaler capital, landing in a country that has chosen coal out loud, beside a methane source that costs almost nothing to abate. The only question left is the one the Methane Brief always returns to — not whether the coal burns, but whether its methane vents.

THE FIX

The dull machine that already works

Ventilation Air Methane (VAM) mitigation, USA. Built 2012, operated more than 10 years. Considered for relocation. Picture courtesy of Durr CTS

Here is the technology the conversation keeps overlooking, because it is unglamorous. A regenerative thermal oxidiser is a box of ceramic heated to around a thousand degrees. Dilute methane from a mine's ventilation air is drawn through it and oxidised to carbon dioxide and water, releasing far less warming than the methane would have caused intact. Well-built units are credited with destroying

ninety-five to ninety-nine per cent of the methane that passes through them. The technology is deployed at mines in Australia, across China and in the United States; the live work now is on standardising the safety governance of routing dilute, near-flammable air through a furnace, not on proving that it works. It works. It has for years.

And it is cheap in a way that reframes the whole debate. Coal-mine-methane abatement runs at single dollars per tonne of carbon-dioxide equivalent. Set that beside what the climate money has actually been buying. Microsoft, the largest carbon-removal purchaser the world has ever had, paid somewhere between one hundred and six hundred dollars a tonne for engineered removal — pulling carbon back out of the air with kit still unproven at scale. This spring it went quiet. Reporting said it had paused future removal purchases; its sustainability chief would only say the company might "adjust the pace or volume" as it "refined its approach," and declined to define what that meant. The critique that hardened around the retreat is that by chasing expensive, durable removal, the company inflated prices and drained capital away from cheaper avoidance and destruction credits that are, on integrity grounds, no less real. Destroying a tonne of methane at a mine shaft is no less real than planting a tree. The market simply rewarded the glamorous tonne over the cheap one.

Put the two numbers side by side and the absurdity is the headline. Six hundred dollars to slowly claw one tonne of carbon dioxide back out of the sky. A few dollars to stop a tonne of methane — eighty-two times more potent over twenty years — before it ever escapes. One is a moonshot the market is backing away from. The other is a ceramic box at the top of a ventilation shaft, waiting for a purchase order.

THE PROPOSITION

The test

So here is the proposition, put plainly to the companies building the largest machines we have ever had to power.

Your demand is pulling more coal out of gassy ground than the grid has asked for in a generation. The methane that escapes ahead of that coal is the cheapest tonne of climate action available anywhere on earth right now — cheaper than the trees, far cheaper than the capture towers, and unlike either it stops a super-pollutant at the source before it warms anything at all. You hold the deepest pockets in the history of industry and the loudest climate promises of any sector alive. A rounding error against a single campus would fund the oxidisers to clean the mines that feed it.

This is not an offset to dress up a rising footprint. Coal-mine methane is the genuine upstream emission of the electricity you consume — the warming baked into every

coal-fired kilowatt-hour before it reaches your servers. Abate it and you have measurably lowered the real lifecycle emissions of your own power, now, at a price you would not feel. The technology is not in question. The economics are not in question. What is in question is whether “net zero” was ever built to survive a power bill this size.

The ventilation shafts are running while you read this. Walking the talk costs less than you think — which is precisely why declining to is the tell.

The Clean Exit Campaign / The Methane Brief. Coal mine methane is roughly 82× as potent as carbon dioxide over a 20-year horizon, most of it is vented unburned, and it is abatable today at single-digit dollars per tonne of CO_2-equivalent. The question is not whether coal should burn. It is whether its methane must vent.

Comments