ISSUE No. 1 • MARCH 2026 • CLEAN EXIT CAMPAIGN • methanebrief.org

The $7 Climate Solution Nobody Wants to Talk About

A proven methane mitigation technology works at scale — yet billions still chase $1,000 alternatives.

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82×	40M t	$7	12 yr	Top 4
Methane potency vs CO_2 (20-yr)	Annual coal mine methane emissions	Cost per tonne CO_2e — VAM	Methane atmospheric lifetime	Global methane opportunities by 2030

WHY THIS MATTERS

The first half of 2025 marked a quiet revolution in climate policy that many investors overlooked. The UNECE released its Best Practice Guidance on Ventilation Air Methane (VAM) Mitigation, officially confirming what a handful of engineers have known for years: coal mine methane emissions can be cost-effectively destroyed at just $7 per tonne of CO_2 equivalent. Not $200. Not $1,000. Just seven dollars.

Underground coal extraction. Every revolution of this drum releases methane into ventilation air — waiting for a $7 solution to destroy it. © Shutterstock

Meanwhile, governments continue to pour billions into direct air capture at $600–$1,000 per tonne, while carbon capture and storage commands $200 per tonne. Headlines are dominated by battery breakthroughs, the hydrogen economy, and the distant promise of fusion. A readily available, proven technology sits idle while we fund moonshots that cost 100 times more.

> ***"The engineering challenge has been met. The next hurdle is economic. The technology works. What's missing is the financial architecture to make it truly investable." — Richard Mattus, industrial emissions expert, UNECE 2025***

The Technology: Regenerative Thermal Oxidation (RTO)

Biothermica VAMOX — Central Appalachian Region, U.S. © Biothermica

Anguil VAMTOX RTO start-up — Shanxi Province, China © Anguil Environmental Systems

RTO technology is not new. It was originally developed in the 1970s for industrial air pollution control and has been successfully deployed for VAM mitigation since 2007. It currently operates in Australia, China, and the United States. The process works by drawing low-concentration methane from mine ventilation shafts and destroying it through thermal oxidation — converting it to CO_2, a far less potent greenhouse gas — while recovering heat energy for grid electricity sales.

Methane is approximately 82 times more potent than CO_2 over a 20-year period. Coal mines — both active and abandoned — emit around 40 million tonnes of methane annually. Ventilation Air Methane (VAM), the low-concentration methane draining through mine ventilation shafts, accounts for roughly 70% of total coal mining emissions. This dual revenue stream — carbon credits from verified methane destruction plus electricity income — makes projects bankable independent of carbon pricing alone.

The Methane Math Nobody's Doing

Dr. Lena Isaksson-Höglund of the International Institute for Applied Systems Analysis states: "Looking at opportunities to reduce global methane emissions by 2030, VAM mitigation ranks among the top four globally." The top four. For immediate impact. By 2030. Yet it is conspicuously absent from nearly every national climate plan.

Because methane's shorter atmospheric lifetime (12 years) often leads to it being discounted in long-term models. However, this very characteristic is precisely why cutting methane delivers immediate climate benefits — impacting temperature within years, not decades.

82×	40M t	3.2B t	12 yrs
Methane potency vs CO_2 (20-yr)	Annual coal mine methane emissions	CO_2e 20-year impact (≈ EU annual)	Methane atmospheric lifetime

The Absurd Cost Comparison

Technology	Cost per tCO_2e	Multiple vs. VAM
VAM Mitigation	**$7**	**1× baseline**
Carbon Capture & Storage	$200	29× more expensive
Direct Air Capture	$600–$1,000	86–143× more expensive

We are consistently choosing the $1,000 solution over the $7 one. Why? Because the $7 solution isn't "sexy." It's not AI-powered; it doesn't promise unicorn returns or "transformative innovation." It's just robust industrial engineering that happens to be the cheapest, fastest, and most scalable climate solution available. And this very practicality often renders it invisible to venture capital, which is typically hunting for the next "climate tech unicorn." This oversight presents a significant, often-ignored, investment opportunity.

The Coal Paradox Investors Ignore

Coking coal powers the global steel industry. It is not going away — and neither is its methane. © Shutterstock

> ***"The uncomfortable truth: while thermal coal is a dying industry, coking coal is not."***

Coking coal is essential for steelmaking and will remain a fixture of global heavy industry for decades. Every major steel producer knows this. Every climate policymaker knows this. Yet methane mitigation for coking coal mines barely registers in climate strategies.

Long-term decarbonisation of heavy industry will still be accompanied by methane leaks unless we act proactively. VAM mitigation offers a critical solution — cutting emissions without prolonging coal mine operations. The RTO systems are modular and relocatable as mines close. They are proven to work at scale and can be redeployed elsewhere.

What's Actually Stopping This?

The barriers are not technical. RTO technology has been successfully deployed for nearly 20 years. At $7 per tonne it is literally the cheapest climate solution available. The true barrier is financial architecture and bureaucratic inertia.

THE STRUCTURAL BARRIERS

— VAM does not fit existing carbon market frameworks.

— It is not part of most Nationally Determined Contributions (NDCs).

— There is no standardised investment taxonomy.

— No clear guidelines define credible methane reduction projects.

— No price floor signals serious intent.

The brutal reality: investors cannot invest in what isn't classified as investable. Governments cannot fund what isn't categorised in climate budgets. Companies will not deploy solutions that do not generate recognised credits. The solution exists. The market structure doesn't.

The Policy Playbook

Felicia Ruiz, from the Clean Air Task Force, states: "VAM mitigation is implementation-ready. Given the global importance of rapidly cutting methane emissions, reducing ventilation air methane from coal mines stands out as one of the most effective and immediately actionable strategies."

> ***"What needs to happen — not in five years, but now."***

Four Actions. No Excuses.

1 — SET A METHANE PRICE FLOOR

Set a methane price floor of $20 per tonne CO_2e. This makes VAM projects financially attractive even without subsidies. It remains 10–50× cheaper than every alternative. It makes VAM worth investors' time.

2 — CREATE STANDARDISED INVESTMENT TAXONOMIES

Define what qualifies as credible methane reduction. Make it bankable, boring, and investable. Without clear classification, capital cannot flow.

3 — MANDATE VAM IN NATIONAL CLIMATE STRATEGIES

Every country with coal mines should incorporate VAM in their NDCs until mine closure. It is low-hanging fruit we are allowing to rot.

4 — BUILD IT INTO CLIMATE FINANCE FRAMEWORKS

Development banks should designate methane as a priority category. Green bonds should introduce methane-specific instruments. Climate funds should dedicate methane allocations. Methane should be a primary category, not an afterthought.

The Blind Spot Bloomberg Missed

Bloomberg's 2026 climate trends report recently covered 14 major developments, from EVs and nuclear power to China's five-year plan and Trump's energy rollbacks. They missed this. Most climate tech investors have never even heard of VAM. EU policymakers chase hydrogen and fusion while methane leaks from mines across Poland, Germany, and the Czech Republic continue. This isn't a technology problem; it's a recognition problem.

The Emergency Brake We Keep Ignoring

> ***"We're trying to fix a sinking ship by inventing a revolutionary new hull design (Direct Air Capture) while neglecting the $7 wooden plugs (VAM) already on deck to stop the primary leak."***

Methane reduction is the emergency brake we need while we debate long-term strategy. Cut methane today, and we will see temperature impacts within years. Yet we are so focused on the distant horizon that we overlook the immediate opportunity right in front of us.

The Bottom Line

$7/tonne
Cost of VAM abatement — cheapest climate solution available

82×
Methane's potency vs CO_2 over 20 years

Works today
Not slated for 2035 — operating now in three continents

Global scale
Deployable at scale wherever coal mines operate

Years
Temperature impact timeline — not decades like CO_2 removal

Top 4
Ranked by IIASA among top global methane reduction opportunities by 2030

And we're still not using it. Someone needs to put a price on methane that accurately reflects its climate impact. Someone needs to make VAM truly investable. Someone needs to inform clean tech VCs that there's a billion-dollar opportunity in this decidedly un-sexy industrial process. Because right now, we're losing the climate fight while the $7 solution collects dust.

> ***"Right now, we're losing the climate fight while the $7 solution collects dust."***

Join The Conversation

This conversation needs to happen. Are you seeing methane mitigation in your industry's NDC or ESG framework? If not, why is the $7 solution being ignored? For investors: at what carbon price does VAM become impossible to ignore in your portfolio? For policymakers: what would it take to effectively integrate methane into your national climate strategy?

For more on VAM mitigation: UNECE Best Practice Guidance on Ventilation Air Methane Mitigation — **unece.org/sustainable-energy/publications/unece-best-practice-guidance-ventilation-air-methane-mitigation**

ABOUT THE METHANE BRIEF

The Methane Brief grew out of the Clean Exit campaign — launched June 2025, 500,000+ impressions in six months. Published every two weeks for investors, policymakers, and industry decision-makers who need to act on methane now, not later.

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