Is AI Killing Sustainability?

Six tips for your organization to use AI tools to cut corporate GHG footprint and boost sustainability.

By Raju Chellam

The sustainability task force at our MNC decided it was time for IT to "lead by example." Suddenly every meeting began with someone asking how we could reduce our energy footprint. The infrastructure team, already juggling three outages and a mysterious humming noise from Rack 42, nodded while quietly panicking.

A week later, the facilities team proudly announced a "cost-neutral, eco-positive cooling optimization initiative." No one knew what that meant but it sounded harmless. Until we walked into the data center and found it warmer than a marketing offsite in Goa. Within hours, dashboards showed our servers running suspiciously cooler, resource usage and energy savings skyrocketing. Sustainability cheered. Finance cheered louder. IT just stared at the temperature gauges which were now in the red zone.

At the next town hall, leadership celebrated our progress with a big, triumphant slide: "Our servers now run at 30% lower energy. Not because of efficiency, but because the cooling budget got cut."

If that anecdote made you wink, these statistics should make you think: Worldwide spending on AI is set to reach US$2.52 trillion this year, up a sharp 44% over US$1.75 trillion last year and will cross US$3.3 trillion by 2027, according to the latest estimates from Gartner Inc. Building AI foundations alone will drive a 49% increase in spending this year on AI-optimized servers which will account for 17% of the total AI spend. AI infrastructure will add another US$401 billion as a result of technology providers building out AI foundations.

TROUGH OF DISILLUSIONMENT

"AI adoption is fundamentally shaped by the readiness of both human capital and organizational processes, not merely by financial investment," says John-David Lovelock, a Gartner distinguished vice president. "Organizations with greater experiential maturity and self-awareness are increasingly prioritizing proven outcomes over speculative potential."

Gartner says AI will experience a "trough of disillusionment" this year. That means interest in AI will wane as experiments and implementations fail to deliver. Vendors shake out or fail. Investments continue only if the surviving providers improve their

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products to the satisfaction of early adopters. "That's why AI will most often be sold to enterprises by their incumbent software provider rather than bought as part of a new moonshot project," Lovelock adds. "Improved ROI must occur before AI can truly be scaled up by the enterprise."

A boom in AI spend correlates directly to a boost in data center (DC) buildout which in turn means exponential boost in power requirements. In the Asia-Pacific region outside of Japan, the total installed IT power capacity is set to reach 142.6 GW (Gigawatt) by 2029, up from about 52.8 GW in 2024, growing at a CAGR (compound annual growth rate) of 22% during the period. That estimate comes from IDC (International Data Corp).

"Demand for AI, cloud and other digital services is rising fast, pushing hyperscalers, cloud service providers and digital service operators to expand at record speed," IDC reports. "Major construction and expansion projects across India, Malaysia, Japan and Southeast Asia are also fuelling growth. These new and upgraded facilities are reshaping the region's digital infrastructure as operators work to deliver high-density, scalable and AI-ready DCs that can meet next-generation compute needs."

The situation will become severe in the US by 2028 when more than 50% of the electricity going to power DCs will be used for AI workloads, estimates LBNL (Lawrence Berkeley National Laboratory). By then, AI alone could consume as much power as 22% of all US households annually.

THE CLIMATE QUESTION

The moot question: Is the soaring demand for AI, among other pressures, killing all attempts at environmental sustainability? Has all the talk about global warming and the need to curb GHG (greenhouse gases) hot air?

For much of the past decade, the underlying logic of climate action has been clear. The world set commitments to limit warming to 1.5°C, or at least well below 2°C. Those global targets cascaded through to institutional commitments, including multilateral agreements, sectoral targets and national, corporate and investor pledges.

"This architecture of commitments became a unifying logic built around limiting the most damaging effects of climate change," McKinsey says. "It created a shared sense of purpose, mobilized capital and established measurable benchmarks for progress. It became a shared "why" that motivated governments, companies and investors to take climate action."

However, multiple forces have started to destabilize this architecture of commitments. "The shared 1.5°C goal by 2050 that anchored this architecture is slipping out of reach," McKinsey warns. "Higher interest rates have raised the cost of capital required to upgrade our existing energy systems and build new infrastructure. Geopolitical tensions have weakened multilateral cooperation. Domestic policies, from incentives to regulation, have shifted repeatedly in major economies. The corporate and investment communities are grappling with trade frictions, supply chain vulnerabilities, and the potentially monumental shifts driven by AI."

McKinsey says many low-carbon solutions that once required subsidies now compete directly with their high-emission peers. Some examples:

- In power, renewables are the lowest-cost source of new generation across much of the world. In 2024, 91% of new utility-scale renewable-power projects commissioned globally delivered electricity at a lower cost than the cheapest new fossil fuel alternative.
- In transport, electric vehicles have reached cost parity in some markets. By 2024, most small BEVs (battery electric vehicles) in China were priced below the average small ICE (internal combustion engine) car, and more than half of BEV SUVs were also priced lower than their ICE equivalents.
- In industrial processes, advances in electrification, hydrogen and carbon capture are moving rapidly down their cost curves. For example, capital costs for proton exchange membrane electrolyzers fell by roughly 90% between 2000 and 2020, a dramatic decline that boosts the competitiveness of low-carbon hydrogen.

AI could further accelerate this shift. "By analyzing massive datasets—from building energy use to industrial process flows—AI can identify combinations of measures that maximize emission abatement at minimal cost," McKinsey advises. "In the

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building sector, millions of buildings could generate near-term value from building upgrades, but often neither building owners nor providers of upgrade services know which buildings would most benefit. AI tools could make identifying high-ROI building decarbonization opportunities easier."

SIX TIPS FOR 2026

Can your organization put AI tools to use to reduce your corporate GHG footprint and boost sustainability? Here are six suggestions—in alphabetical order—for you to consider implementing:

- **Automate** waste management and recycling. Deploy AI-powered sorting systems and computer vision to identify and separate recyclable materials more accurately than manual processes. Use predictive analytics to optimize waste collection routes, reduce fuel consumption while improving efficiency. AI can also monitor waste streams to identify reduction opportunities and track progress towards zero-waste goals.
- **Boost** supply chain optimization. Implement AI algorithms to streamline logistics, minimize transportation distances and consolidate shipments. Machine learning can predict demand more accurately, reduce overproduction and inventory waste. AI-driven supply chain visibility can help identify high-emission suppliers and suggest lower-carbon alternatives thereby supporting sustainable procurement decisions.
- **Coordinate,** predict and prevent environmental risks. Deploy AI monitoring systems to detect methane leaks, water pollution or other environmental hazards early. Predictive models can assess climate risks to facilities and operations, enabling proactive adaptation strategies that reduce both environmental impact and business vulnerability.
- **Deploy** dashboards to monitor and report emissions accurately. Leverage AI to automate GHG accounting across operations, processing data from IoT sensors, utility bills and activity records. Machine learning models can fill data gaps, verify accuracy and generate real-time emissions dashboards. This can enable faster identification of emission hotspots and more credible sustainability reporting to stakeholders.
- **Enhance** energy efficiency in buildings and operations. Install smart building management systems that use AI to optimize heating, ventilation, air conditioning and lighting based on occupancy patterns and weather forecasts. These systems can reduce energy consumption by 20-30% while maintaining comfort. AI can also identify equipment inefficiencies and predict maintenance needs before failures occur, thereby preventing energy waste.
- **Forecast** and optimize renewable energy integration. Use AI forecasting to predict solar and wind generation, enabling better grid management and energy storage decisions. Machine learning can determine optimal times to charge electric vehicle fleets or run energy-intensive processes when renewable energy is abundant, maximizing clean energy utilization.

Since we started with one supposedly sustainable fable, let's end with another: At the leadership meeting, the CTO presented a deck with diagrams, all shaped like arrows pointing heroically towards sustainability. "It's time to embrace green cloud architecture," he declared. Then, the CFO put up his own charts except they all pointed towards cost reduction. "Green must be financially lean," he countered.

The CTO's slides started becoming progressively less green with every question asked. Renewable energy zones? Too expensive. Carbon-aware workloads? Maybe in 2028. Multi-region failover? Impractical. By the end of the meeting, the once-vibrant strategy looked like it had been bleached.

And so, the final architecture was announced: The CTO said we should move to green cloud architecture. The CFO said we should move to cheaper cloud architecture. The CMO came up with a label that pleased everyone: "We're a lite green enterprise!"

Raju Chellam is a former Editor of Dataquest and is currently based in Singapore, where he is the Editor-in-Chief of the AI Ethics & Governance Body of Knowledge, and Chair of Cloud & Data Standards.

maildqindia@cybermedia.co.in