

The Straight Line: Elephants Don’t Hang Around Flagpoles

By Paul Leonard, Prof. Vladimir B. Kopylov

We’re mesmerized by the coastline of incrementalism—dissecting every curve of a line in obsessive detail, praising our “granularity,” while the straight line, the transformative path, lies ignored. Cascade Catalysts’ quantum excitonic platform is projected to deliver up to 25× energy gains to power fuel cells, catalysts, or microgrids. It’s a breakthrough that could end energy scarcity, yet those tethered to the flagpole—VCs, regulators, corporate R&D—dismiss it, blind to its potential. Why? They’re trapped by incrementalism, and they lack the skills to see the straight line.

To wide thinkers—Peter Thiel, contrarian founders, visionary VCs—this is your moment. Generational technologies don’t lurk in 2% yield gains; they redefine existence with exponential energy efficiency. Here’s how to recognize them, and why we must act.

The Trap of Incrementalism

Incrementalism only matters when it transforms energy conversion efficiency—the driver of human progress. A 0.2% better catalyst yield is trivial; a platform that engineers excited states across any stable element, achieving 25× energy at ambient conditions, is revolutionary. Cascade’s technology, detailed in our 2021 ChemRxiv preprint, does this, directing energy for barrier-free reactions. But closer to the

flagpole—where budgets are held by VCs chasing quick returns, policy makers, regulators protecting scarce-resource systems, or CTOs tethered to roadmaps—incrementalism reigns.

For 350 years, the mystery of why catalysts work has stumped scientists, a conundrum that isn't a failing of universities or research but a fundamental truth of our incomplete understanding [7]. Without a cohesive theory, catalyst design remains an art of discovery, not prediction, locking flagpole gatekeepers into empirical tinkering. Unraveling this puzzle, as Cascade's quantum excitonic platform aims to do, could transform not just the two-thirds of global manufacturing powered by catalysis but also advanced materials—magnets that redefine energy storage, semiconductor surfaces that revolutionize computing. Yet those at the flagpole, oblivious to this vast potential, cling to incremental gains, missing the straight line to a new era.

These decision-makers lack the technical depth to grasp energy state physics. They fixate on granular metrics—yield curves, pilot timelines, supply chain metrics—while dismissing leaps like Cascade's as "unproven" [1]. On the periphery, where startups and independent thinkers roam, incrementalism fades. Here, bold ideas thrive, unburdened by the flagpole's need for safe bets [2]. The tragedy is that power sits at the center, and those with wallets can't see the straight line.

This costs us dearly: scarcity-driven energy, geopolitical REE/PGM dependencies, and a stagnant future. The straight line—abundant, efficient energy—awaits those who can see it.

How to Spot Generational Technology

Generational technologies are straight lines—universal, disruptive, and energy-driven. They don't optimize old systems; they replace them. Based on Cascade's work, here are four criteria for wide thinkers to identify them:

1. Masters Universal Energy

The straight line controls energy, not materials. Cascade's platform induces excited states in any of ~80 stable elements or their compounds, tailoring energy via electronic properties for applications like catalysis or fuel cells, per our ChemRxiv preprint [1].

Ask: Does it manipulate energy across abundant elements, unlocking exponential potential?

2. Redefines Energy Efficiency

Transformative ideas achieve impossible efficiencies. Our excited-state design delivers leaping energy gains at atmospheric pressure and moderate heat, enabling barrier-free CO2 reduction or C–H activation, making traditional catalysts obsolete [3]. That said, traditional catalysts could be significantly improved by Cascade's design methodology.

Ask: Does it deliver exponential energy gains, rendering old paradigms irrelevant?

3. Built on First-Principles

The best innovations are deliberate, not accidental. Cascade's nanostructuring and quantum modeling engineer energy states with precision, mimicking nature's efficiency, as outlined in our preprint [1]. This isn't incremental R&D; it's predictive design [4].

Ask: Is it a calculated leap, grounded in universal truths?

4. Empowers Trillions

Generational technologies decentralize power (perhaps this is where the problem lies?). Our ambient, microgrid-compatible platform portends to put energy in everyone's hands, projected to slash balance of plant and manufacturing costs by eliminating high pressure and heat in many industrial processes, enabling decentralized deployment, while reducing quantum-effect catalyst costs from $30k/kg to $5/kg and eliminating unwanted emissions [5].

Ask: Does it scale to empower, not entrench, control?

The Challenge to Wide Thinkers

Thiel, your allies, your contrarian successors—you live for zero-to-one moments, for bets that reshape the world. Cascade's platform is that moment: a straight line to a future where energy is limitless, scarcity is gone, and power is decentralized. But you must bypass the flagpole's unskilled gatekeepers, who can't parse energy physics and cling to granular noise. Use these criteria to find the signal, then fund it, build it, fight for it. The coastline is for the timid; the straight line is for you.

The Energy Future

Picture a world where abundant elements powers your life, where energy is accessible, where geopolitics lose their hold. Cascade Catalysts is building that world, but it needs thinkers who see beyond the flagpole. The stakes are stark: incrementalism locks us in stagnation; the straight line unlocks existence.

I'm at Cascade Catalysts, forging the energy revolution. Join me. Share a straight-line technology you see—what makes it generational, and why isn't the flagpole listening?

What's the energy breakthrough you're betting on, and how do we break the flagpole's grip?

References

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