

James Walters

(Speaker
#3)

Good afternoon Council President Stewart and esteemed Councilmembers,

Thank you for the opportunity to speak today.

My name is James Walters. I serve as an Incubator Member and partner of Bethesda Green, a Partner at the Greater Baltimore Committee, and I'm the CEO of Avos BioEnergy. We're proud to represent the kind of innovation, sustainability, and entrepreneurship that Montgomery County **can** become known for—turning climate challenges into economic opportunity, and advancing real solutions born from this region.

I am here in full support of the Material Recovery and Biological Treatment (MRBT) facility, with a critical recommendation: that the County use this moment to unlock a **public-private-academic partnership framework** and incorporate **pilot integration** of the *Reimagine Dickerson* initiative alongside MRBT implementation.

The County Executive's \$38 million request to begin replacing the incinerator is an important step forward; but we propose going one step further without disrupting procurement or vendor selection. Our proposal has been reviewed by DEP, MEA, and several R1 university partners; and we've received explicit encouragement from DEP to explore pilot inclusion, regardless of which vendor is selected. In other words, we're not bidding. Instead, we're proposing a high-impact, multi-entity coalition focused on local innovation and enterprise—where public leadership anchors private capital and academic research to build long-lasting infrastructure at Dickerson.

What we're offering is a pathway to sort and convert 100% of mixed solid waste streams into valuable, climate-smart commodities, like clean hydrogen, syngas, biofuels, and biochar, all without the combustion driving our current emissions. These are proven systems that have been validated by researchers at the University of Maryland, MEIL, MEA, and elite scientists across the RGGI corridor.

This model of industrial symbiosis has been working for over 50 years in Denmark, where the waste from one company becomes the resource for another, and connects a power plant with 20 separate businesses. This ecosystem has been cited over 1,500 times and is a globally recognized success; and we are well-positioned to replicate that success here in Montgomery County, transforming a misappropriated asset into a zero-waste bioeconomy.



Our initiative activates a closed-loop, ROI-generating biotech campus that completes Montgomery County's I-270 corridor. Rather than relying on new taxpayer spending, we propose structuring this as a public-private-academic partnership. A portion of the County's \$800 million general reserve for FY26 serves as a catalytic anchor—matched by state funds through the Next Generation Energy Act, and enhanced by green and social bonds to attract local private capital. This model spreads risk, drives long-term return, and keeps infrastructure under public control—mirroring the Research Triangle's success in turning academic R&D into a \$13 billion-per-year economic engine.

This Council and the County Executive have demonstrated integrity, vision, and courage. DEP has done everything possible with the tools they've inherited, and their efforts are commendable. However, this challenge is larger than any single agency. We will never be able to justify exporting our waste to underserved communities in Virginia. That is not sustainability; it is abominable abdication. We must take responsibility. We must seize this moment to lead with equity, science, and strategy.

Montgomery County is one of the most capable, well-resourced jurisdictions in America and the infrastructure at Dickerson is already in place.

In the wise words of Albert Einstein, “We cannot solve our problems with the same thinking we used when we created them”; and Bayard Rustin said “The proof that one truly believes is in action.”

Let's create something new. Let's Reimagine Dickerson and elevate Montgomery County as a national model for what is possible when we work and act together with common purpose.

For Maryland. From Maryland. Thank you.

Supplemental Testimony – May 14th, 2025

“County Executive’s Recommended Amendments Transmitted to the Council on April 14, 2025 and Other Potential Amendments to the FY25–30 Capital Improvements Program (CIP)”

From: James Walters, CEO, Avos BioEnergy

Re: Support for MRBT Implementation & Next-Phase Planning

To the Esteemed Members of the Montgomery County Council,

Thank you again for the opportunity to testify yesterday in support of the MRBT facility.

As a Montgomery County native, a district 5 constituent, and someone deeply committed to our shared future, I offer this supplemental testimony to highlight opportunities for alignment, innovation, and public benefit. This effort builds on work I [published](#) in September of 2024 that outlines/proposes a solution for transforming brownfields, abandoned mine lands, and industrial sites in Appalachia and emerging economies into bioenergy campuses through circular, closed-loop systems during remediation.

In October of 2024, in sharing our paragon of regenerative solutions with Councilmember Friedson, he challenged me directly to solve the County’s mixed solid waste infrastructure crisis. Since then, I’ve assembled a coalition of Maryland-based and nationally respected experts—from MIT, DEVCOM, DOE, HBCUs, and the University System of Maryland—to build a solution that aligns with the MRBT strategy, and also proposes further steps.

On a self-funded, back-of-napkin, budget we’ve developed and validated a pilot-ready model that:

- Sorts and converts 100% of MSW into climate-smart commodities;
- Leverages proven, zero-combustion systems already in deployment worldwide;
- Integrates seamlessly with existing County infrastructure and necessary long-term planning.

Again, we are not a vendor submitting a bid. We are residents/constituents in Montgomery County; and we have stepped up and produced more actionable progress in 6 months than what has been achieved over the last 6 years, and with \$3 million having been spent on contracted studies.

Last year, I testified in support of the Council’s \$20 million special appropriation for the New JOBS Initiative. A portion of that investment was earmarked for innovation. I never applied for funding—I simply got to work. I truly believe each of you wants to empower innovation, but we must recognize it when it emerges fully formed, accountable, in service, and aligned with County goals. Mentored by, and in partnership with, Bethesda Green, and supported by world renowned subject matter experts, our coalition has dedicated themselves to working through bottlenecks and to introducing proven, new technological solutions for a daunting challenge that has been addressed ineffectively for too long. What we’ve built is not theoretical. It’s shovel-ready; and it was created directly in concert with the spirit of the Council’s investment in innovation and jobs. Importantly, our approach fits within the County’s existing frameworks:

- **COMCOR 11B-4(f)** allows procurement exemption for energy innovation and R&D pilot programs, with CAO discretion;
- **\$42.66M in procurement waivers** were granted in FY22—demonstrating precedent;
- **\$20M in special appropriations** were awarded in FY24 for the New JOBS Initiative; and
- **Existing State Programs** stand ready to match County funds, reducing risk and building a strong foundation for attracting significant private capital.



Our model is structured as a **public-private-academic partnership (PPAP)**—in collaboration with Bethesda Green, local incubators, MEIA, MEA, MEI², and regional R1 institutions. It reflects the intent of the Council’s innovation agenda and aligns with the County’s FY26 economic and environmental priorities.

This isn’t about bypassing procurement. It’s about activating *every tool we already have* in order to elevate what’s possible and ensuring that Montgomery County continues to lead with courage, commitment, competence, equity, and community-rooted innovation.

I’m meeting with the CEO of CSX today to advocate for, and exchange ideas for logistical partnerships; and I’ll be joining an investor summit hosted by the Greater Baltimore Committee with 16 of the region’s top executives on Thursday. These are not side projects—this is about building on the momentum that your leadership has helped make possible.

This should not be political. The urgency was made abundantly clear in the May 5 hearing with DEP, where systemic gaps were self-evident, but bureaucracy should not hinder duty. Together, with a cross-sector team of local experts, we’ve developed a solution that reflects the County’s full potential—without asking for special treatment.

On a personal note, this work is more than professional—it’s a matter of purpose. After undergoing major spinal surgery in February 2024 at Holy Cross Hospital, I’ve been navigating disability, recovery, and gratitude for a second chance at life given by the best and brightest of Montgomery County. So rather than sit still, I’ve used this time to contribute everything I can.

Let’s take advantage of this opportunity to lead and *elevate*.

With humility and hope,

James Walters

CEO, Avos BioEnergy
Partner, Greater Baltimore Committee
Member & Incubator Partner, Bethesda Green
Published Author, NIH/PubMed
443.668.5150 | james@avos.bio



For Maryland. From Maryland.



From Waste to Wealth: Maryland's Blueprint for Emissions-Free Energy & the Circular Bioeconomy

Strategic Briefing Document

Advanced Waste Valorization Platform

Vertically integrated, AI-driven, biotech-powered ecosystem: the nucleus of Maryland's regenerative industrial base

This Briefing Document is intended to inform the establishment of symbiotic systems that utilize proven advanced technologies to optimize Maryland and Montgomery County's strategic role in funding, procurement, and public-private-academic partnerships for a scalable biotech campus at Dickerson.



Executive Summary

The *Reimagine Dickerson* initiative is a shovel-ready, high-impact system of technologies to transform the existing, outdated, combustion-based waste infrastructure into a modular, emissions-free, circular biotech campus. Designed as a Public-Private-Academic Partnership (PPAP) that's rooted in industrial symbiosis, this initiative will convert Maryland's combined municipal solid waste (MSW)—the largest untapped source of carbon biomass on the East Coast—into a high-value stream of baseload energy and bio-manufacturing inputs and outputs that contribute to:

- landfill and incinerator phase-outs
- clean baseload energy development
- advanced bio-manufacturing
- equitable job creation
- and carbon-negative infrastructure.

This model has been validated in conversations with UMD, MEA, MoCo DEP, MIT alumni, and a coalition of state and academic leaders. It is designed to scale from Montgomery County to Baltimore, Aquasco, Pasadena, Cumberland, Curtis Bay, and the broader RGGI corridor.

Our Model

1. Industrial Symbiosis as Infrastructure

This is not a single vendor or siloed facility. *Reimagine Dickerson* is an engineered **ecosystem** whereby:

- One company's waste stream is another's feedstock,
- By-/products (e.g. energy, waste, heat, water and CO₂) are shared, reused, and circulate between/through co-located bio-hub facilities, and
- Advanced Technologies (e.g. multi vector pyrolysis, hydrothermal liquefaction, anaerobic digestion, and fuel cells) that are modular, with zero-combustion, and are mutually reinforcing are utilized.

This model of industrial symbiosis has been proven for over 50 years in Denmark, where a central power plant shares energy, steam, and waste streams with over 20 companies and has created a regenerative industrial ecosystem that has been [cited in over 1,500 academic studies](#). We can now improve upon what Kalundborg did with fossil-based inputs with zero-emissions, bio-based innovation to turn Dickerson into Maryland's clean energy and bioeconomy launchpad. It's a kind of "industrial forest" - interdependent, efficient, adaptive. Our approach builds upon Kalundborg's 50-year industrial symbiosis model and updates it with AI driven solutions and advanced technologies.

2. AI + Quantum + Advanced Sorting Systems

Sorting waste is the foundation of closed-loop success and combines/integrates:

- **Sensor fusion** (NIR, hyperspectral, optical, fluff sorters),
- **AI-trained material recognition** models co-developed with UMD and MIT partners,
- **Gamified UX for waste stream refinement**, engaging labor and tech simultaneously, and
- **Emerging quantum computing platforms** like IonQ for ultra-fast process optimization.

This creates precision feedstock refinement across plastics (e.g., PVC), organics, contaminated biomass, and medical waste and converts mixed solid waste from a mis-appropriated asset into its' real, full, and valuable potential to become a **trillion-dollar industry**.

3. Fuel Cells Provide Clean Baseload Power

Unlike intermittent renewables, our platform includes:

- **Sulfur tolerant molten carbonate and solid oxide fuel cells (SOFCs)** for syngas & hydrogen,
- **Direct ethanol fuel cells** from contaminated organic biomass,
- **CHP integration with bio-oil and syngas co-products, and**
- **EROI of 28:1** from solar-assisted symbiotic production—**matching the energy return of coal**, but without emissions, combustion, or ecological harm.

Fuel cells make solar and wind whole and offer clean, continuous baseload capacity for grids, fleets, and co-located industry.

Creating Complete Waste Valorization Without Emissions

- Divert **600,000+ tons** of waste from incinerators and landfills,
- Sort and process **organics, contaminated biomass, plastics (e.g., PVC), and hazardous waste** with AI/robotic separation,
- Produce **clean hydrogen, syngas, ethanol, bio-oil, and carbon-negative biochar, and**
- Power on-site operations with **sulfur-tolerant fuel cells and modular CHP systems.**

Funding Strategy & Economic Modeling

Unlike traditional infrastructure models that rely heavily on public subsidy or external corporate control, this initiative is structured as a **Public-Private-Academic Partnership** designed to avoid legacy funding traps and unlock multi-source financing by:

- Accessing **Montgomery County's \$800M general reserve,**
- Leveraging cost-matching through the **Maryland's Next Generation Energy Act,**
- **Utilizing Local Green Banks ((e.g. Maryland Clean Energy Center (MCEC) and Montgomery County Green Bank)),**
- Utilizing **green bonds, social bonds, and local private equity, and**
- **Improving on North Carolina's Research Triangle model (now a \$13B engine).**

This shares the burden, spreads the risk, and multiplies the return—while ensuring local ownership of land, labor, and long-term value. The structure mirrors the Research Triangle model in North Carolina, which transformed academic R&D into a \$13B-per-year economic engine. Reimagine Dickerson does the same for Maryland: completing the biotech corridor with a campus that's powered by waste, optimized by AI, and rooted in environmental justice.

The Big Picture

Codifying waste as a beachhead commodity class: 1. unlocks massive ROI and industrial resilience, 2. creates political leverage against PJM constraints, 3. brings emissions-free capacity into baseload rotation, and 4. positions Maryland as the national leader in post-incineration ((i.e. Waste-to- Energy) infrastructure. ***This is the state's checkmate move on waste, energy, and climate. The platform is ready. The moment is now.***

Why This Model Should Matter

Our model is an entirely new waste system paradigm and a strategic platform curated and designed specifically for Maryland, enabling the state to lead nationally in post-combustion waste innovation, baseload clean energy, and regenerative industry. This system delivers energy independence, economic clustering, and ecological restoration in one closed-loop framework—rooted in precedent, grounded in policy alignment, and ready for implementation that will provide:

- **Innovation Campus Potential:** Converts environmental liabilities into *infrastructure for green manufacturing, AI labs, and circular bioindustry*.
- **Versatile Economic Engine:** Converts environmental liabilities into innovation campuses that fuel clean manufacturing, green logistics, and bio-based products.
- **Grid-Integrated Baseload:** Co-locates with transmission, water, rail—providing reliable, dispatchable baseload clean energy into existing systems.
- **Workforce Pipeline:** Direct coordination with USM, HBCUs, RGGI R1 Institutions, and 2.9M students on Handshake to train and employ Marylanders in the emerging bioeconomy.
- **Proven Concepts, Not Theory (i.e. “No Brag, Just Fact”):** This model is backed by a coalition of engineers, researchers, policy experts, and agency leaders. It has already passed initial agency-level reviews and should be tailored to harmonize with the needs, culture, and infrastructure advantages of additional counties throughout the state.

Our Ask

This is not a pitch for a product. It's an invitation to co-develop the blueprint for Maryland's post-incineration future. We're seeking input, attention, dissension, discernment, refinement, and support in exploring how this model can **complement or augment current Waste to Energy evaluations** and position Maryland to lead the nation in post-combustion infrastructure innovation. We are hoping that you will become a valued partner in our Value engineering of our initiative, and we are available for briefings and willing to work within agency frameworks to scope this into a scalable pilot and/or integrated deployment.

Prepared by:

James Walters

Founder & CEO, Avos BioEnergy

Partner, Greater Baltimore Committee

Member, Bethesda Green

Published in [PubMed](#) on Transforming Abandoned Industry into Bioenergy Parks



443.668.5150
james@avos.bio

Appendix Tables:

Built for Maryland's Moment

Program / Policy	Relevance
Governor Wes Moore's RISE Initiative	Industrial site revitalization, community equity
FY26 Economic Growth Agenda	P3 infrastructure (\$7M), clean tech scale-up (\$6M), business expansion (\$25M)
MEA's SEIF & Resilient Maryland Program	Waste-to-energy, clean hydrogen, microgrids, AI integration
NextGen Energy Act	Fossil-free baseload energy, academic co-development
IRA & DOE Bioenergy Programs	Carbon credits, feedstock-to-fuel incentives

Key Impact Metrics

Category	Value
Waste Diverted	600,000+ tons/year
Energy Generated	182–655 MW - forecast/estimated over a 5-year timeline
Hydrogen Output	1.5–3 kg H ₂ / ton MSW
Carbon Capture	\$85–\$180/ton (via biochar + syngas offsets)
New Jobs (direct/indirect)	300 permanent FTEs at Dickerson and 1,200 indirect jobs
Academic/Private Partners	UMD, MEI ² , Bethesda Green, MEIA, Greater Baltimore Committee, United Therapeutics, Pepco, Constellation Energy, & Avos BioEnergy

*We can accomplish all of this **without combustion and without smokestacks**—leveraging proven platforms that qualify for decarbonization support.*