



Planning an Onsite Small-Scale Decentralized Composting Facility

Fundamentals for Getting it Right: A
Practical Roadmap

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GREEN MOUNTAIN TECHNOLOGIES

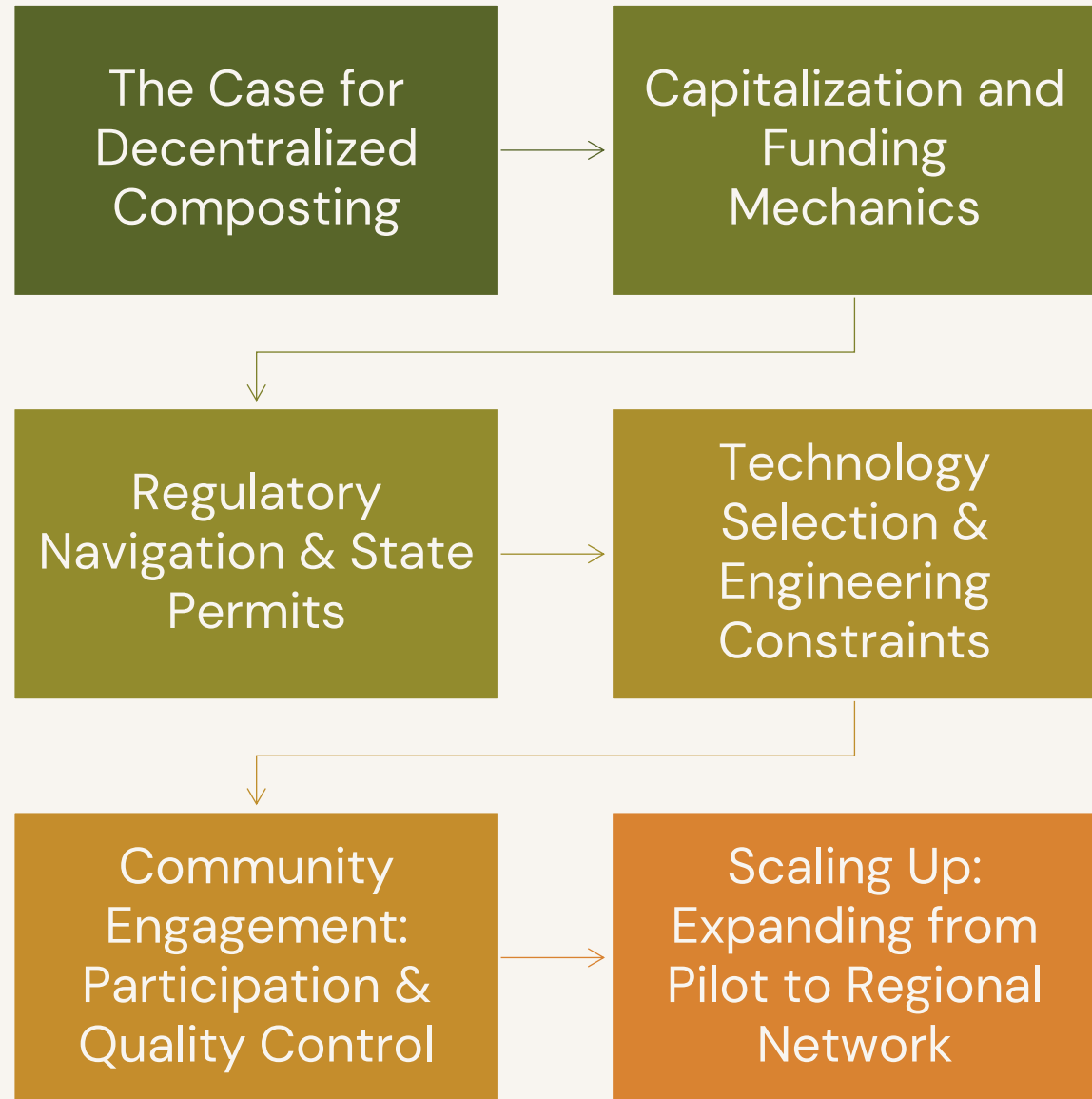


About Green Mountain Technologies



- **Commercial composting facility design and technology since 1992**
- **Hundreds of commercial facilities and In Vessel clients of all types and sizes**
- **Headquarters: Seattle, Washington**

Agenda & Learning Objectives



Why Decentralized Composting?

- **The Centralized Hauling Liability:** Reverses the compounding financial costs, logistical vulnerabilities, and carbon footprint of trucking organic waste long distances to distant, centralized facilities.
- **Closed-Loop Communities:** Keeps organic nutrients entirely within the local foodshed or neighborhood where they are generated, maximizing local resource visibility.
- **Rapid Velocity of Implementation:** Bypasses the multi-year timelines, intense environmental reviews, and heavy capital deployment required for centralized mega-facilities.

Case Study Anchor: Beaufort County Composting Pilot *A Real-World Blueprint for Local Government Diversion Without a Mandate*

- **The Distance Barrier:** Too far from the closest commercial processing facility to make long-distance hauling logistically or financially viable.
- **Controlled-Intake Pilot Strategy:** Managing initial operational risk by starting with a dedicated residential drop-off program at county convenience centers, paired with limited school and commercial intake.
- **The Under-30-Day Permitting Win:** Partnered directly with the state Department of Environmental Services (DES) to secure a conditionally exempt permit, bypassing outdated regulations that lacked precedent for in-vessel systems.



Capitalization, Funding, & ROI Strategies

Securing Upfront Capital and Providing Longterm Value



Grant-Absorbed Capital Risk: Utilizing federal and state vehicles (like USDA or EPA grants) to cover primary equipment costs without impacting local taxpayers.



Planning Document Alignment: Embedding composting targets directly into Comprehensive Plans or Climate Action Plans to legally and strategically justify funding allocations.



Flexible Financing Options: Leveraging tax-exempt Municipal Lease-Purchase bank agreements to spread equipment costs over time without issuing public bonds.

Site Selection & Spatial Footprints *Maximizing Existing Municipal Infrastructure with Compact Tech*

- **Co-Location Advantages:** Capitalize on existing public footprints by placing decentralized systems at active convenience centers, wastewater plants, or public works yards.
- **Minimal Spatial Requirements:** Leverage highly dense, automated in-vessel designs that process thousands of pounds daily within a fraction of a standard acre.
- **Proximity to Source:** Eliminate transportation friction by siting processing infrastructure as close as possible to the community zone where the organic waste is generated.







Regulatory Navigation: Collaborative Permitting

Partnering with Regulators for Fast-Track Approvals



Early and Proactive Engagement: Involve state environmental agencies during the early feasibility phase to co-create a clear compliance path.



Leveraging Low-Risk Classifications: Target "conditionally exempt" or automated in-vessel regulatory pathways designed for smaller processing volumes.



Proving Absolute Containment: Eliminate primary regulatory fears by utilizing engineered barriers against odor, vectors, and stormwater runoff.

Permitting Framework Comparison

Why Enclosed Systems Accelerate the Approval Process

System Type/Risk Level	Typical Permit Timeline	Primary Regulatory Hurdles
Traditional Open Windrow (Full Category 2 Permit)	6 to 18 + months	Full stormwater engineering, strict odor control plans, and certified operator.
Aerated Static Pile (ASP) (<i>Standard Tier 2 Permit</i>)	3 to 6 months	Dedicated concrete pad design, leachate collection systems, vector attraction reduction logging, and certified operator.
Enclosed In-Vessel Composter (IVC) (Conditional Exemption Pilot)	Under 30 days	Operational volume limits, automated temperature tracking, certified operator.

In-Vessel Technology & Infrastructure

The Mechanics of Accelerated, Enclosed Aerobic Composting





The Human Element:
Participation & The Workforce
Strategy and Daily Execution for Long-Term Success

The Dedicated Champion & Redundancy: Identify a project leader to own the results, while cross-training secondary staff to ensure operational redundancy and zero-downtime.

Minimal Daily Labor Impact: Transition from manual labor to "process management" with a daily routine requiring just 1 to 2 hours of staff time.

Active Carbon Management: Sourcing local wood chips and leaf waste to maintain a dry stockpile—ensuring a true biological process rather than simple dehydration.

Community Engagement & Quality Control *Building a Culture of “Clean” Feedstock*



- **Participation as a Privilege:** Require a 5-minute "Compost 101" digital quiz as a prerequisite for program entry, ensuring every user understands exactly what is—and isn't—compostable.
- **Humanizing the Program:** Utilize high-visibility branding and local mascots (like "Mossy") to transform a municipal utility into a recognizable, shared community identity.
- **Secure Access Control:** Issue secure bin access codes only to participants who have completed training, creating a closed-loop system of accountability and zero contamination.
- **Two-Tiered Contamination Planning:** Assume contamination will happen and mitigate it dynamically through front-end hand-picking during loading and back-end mechanical screening during unloading.

Images courtesy of Post and Courier (left) and Beaufort County (right)





Scaling to a Regional Network *The Blueprint for a Connected Municipal Infrastructure*

- **The Hub-and-Spoke Model:** Use the successful small-scale pilot as a repeatable blueprint to deploy modular, decentralized processing units at existing convenience centers across the county.
- **Compounding Financial Returns:** As more processing nodes come online, hauling distances shrink and tipping fees drop exponentially, compounding municipal cost avoidance year over year.
- **True Circular Economy:** Close the loop regionally by generating thousands of yards of high-grade organic material to support county infrastructure, local agriculture, and public parks.



**GREEN MOUNTAIN
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Let's Build the Future of Local Organics Together

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