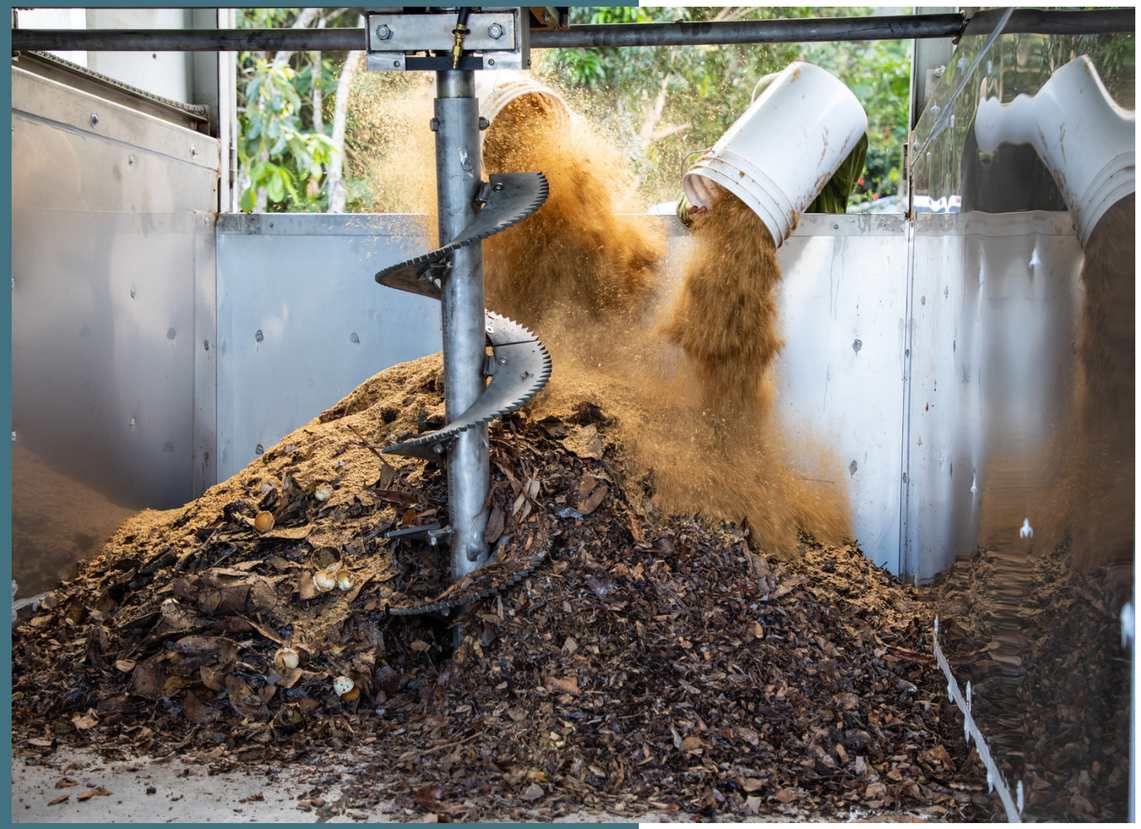
sustainable coastlines Hawaii

2021



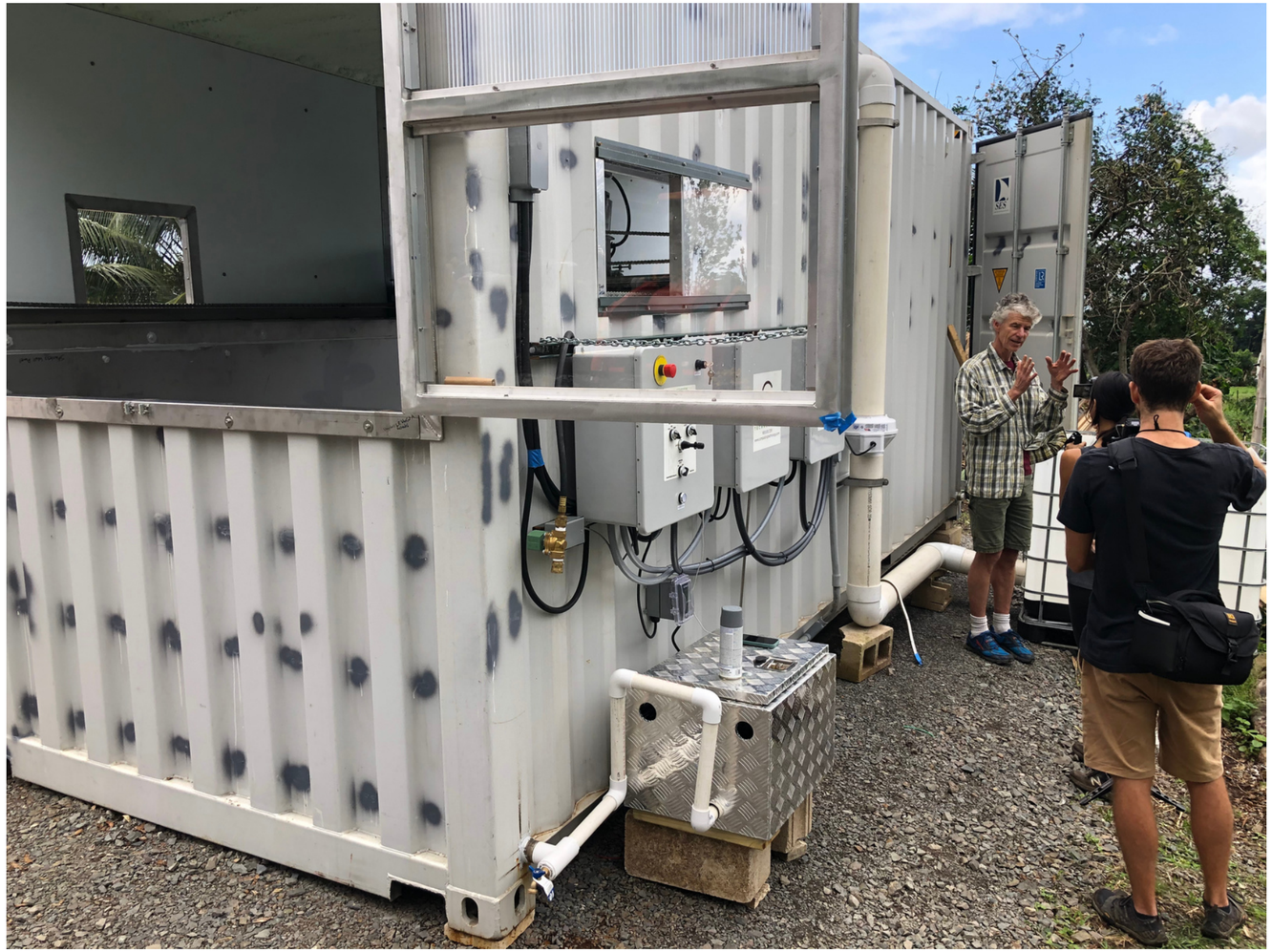
Healthy Soils & In-vessel Composting Microgrids

Hawai'i GHG Sequestration Task Force

Project Summary

Sustainable Coastlines Hawai‘i’s (SCH) in 2020 we brought innovative composting technologies to Hawaii to improve diversion rates, create healthier soils, and expand collaborative efforts that push our policy makers towards more circular solutions. The composting systems will be transformative for Hawai‘i and allow for source reduction and high impact education events. The Green Mountain Technologies Earth Flow In-Vessel composting system is the first of its kind in Hawai‘i and will alleviate problems of odors, emissions, and leachate commonly associated with composting and that the are concerns for regulating bodies.

With partnerships forged with Full Circle Farm, we will divert close to 300,000 lbs. of organic waste each year.



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Carbon Soil Sequestration + Reduced Emissions

Background

- Common agricultural practices result in the return of soil and biomass carbon to the air. Estimated 1/3 of surplus CO_2 in the atmosphere has come from ag and land (mis)management practices.
- Climate Mitigation: Compost is a Victory
  - Sequestration (the drawdown of atmospheric carbon into the soil)
  - Mitigates emissions from other sources (landfilling, burning or allowing organic materials to rot in ponds or pits, which releases the powerful, short-lived greenhouse gases methane, nitrous oxide and black carbon)
  - Land resilience and performance (especially disaster mitigation)
  - Moisture retention and less runoff

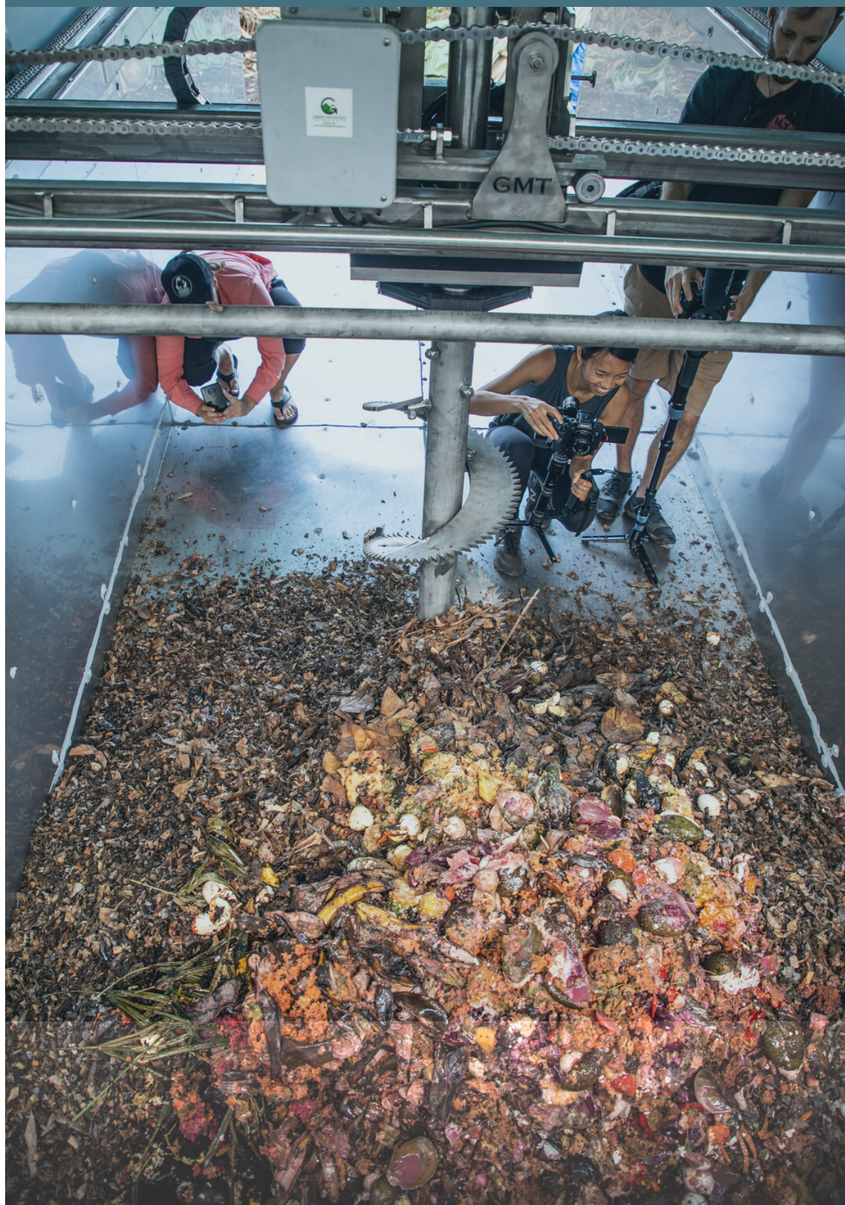
Emissions

- FALSE Narratives around biogenic emissions with waste to energy (does carbon really have to return to the air?)
- In-Vessel Systems are aerobic and should have no methane release
- Single machine estimates: 300,000 lbs. per year composted = 150 tons; As a soil amendment could mean 25-150 tons CO_2 sequestered per year (average person responsible for 4.5 tons per year)

Composting Recipes Matter

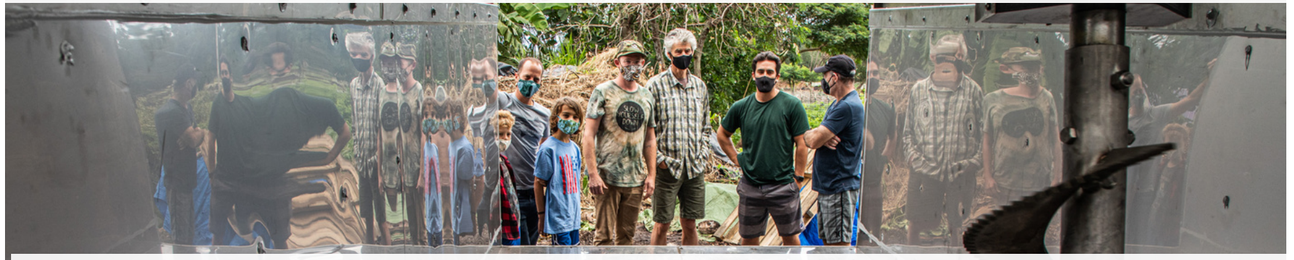
- Maximizing your Recipe - A high Carbon load means slower processing, slower plant growth and thus less sequestration.
- Food waste use - needed for ideal N/C ratios (burning is a waste)

GREEN MOUNTAIN TECHNOLOGIES
COMMERCIAL COMPOSTING SOLUTIONS

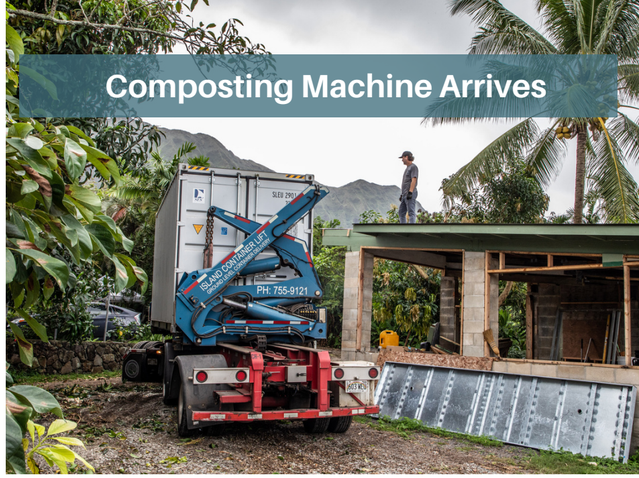


Bringing a Composting Machine to Hawai‘i

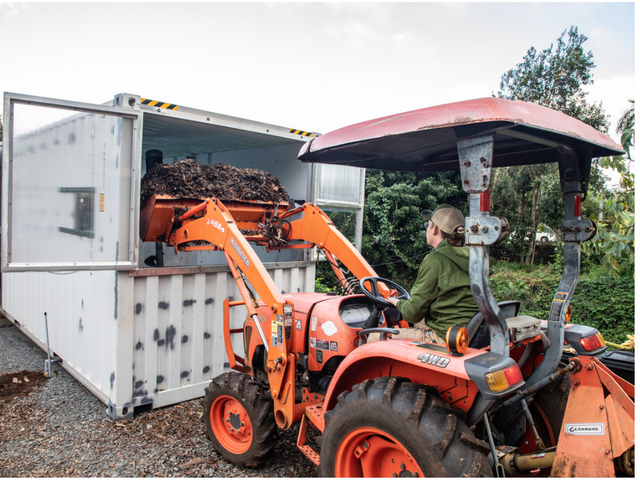
First Workshop at Full Circle Farm

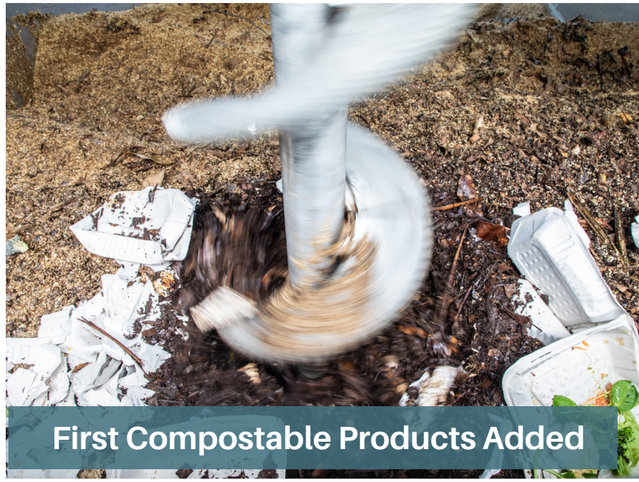


"No odor, no leachate, no methane emissions. An in-vessel system mitigates all these issues when your recipe is correct."
– Michael Bryan-Brown, Founder Green Mountain Technologies

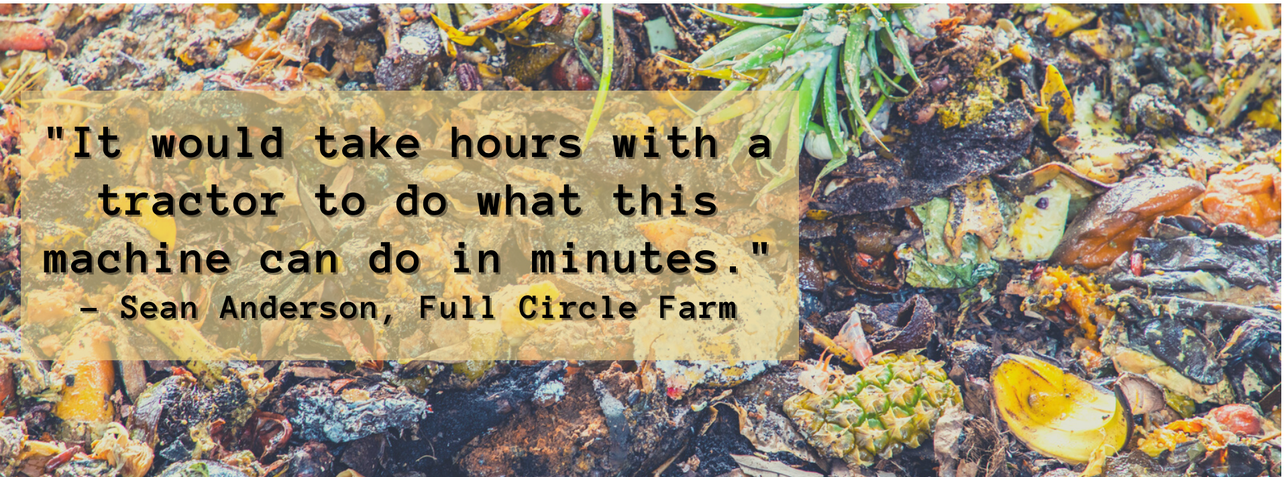


Composting Machine Arrives

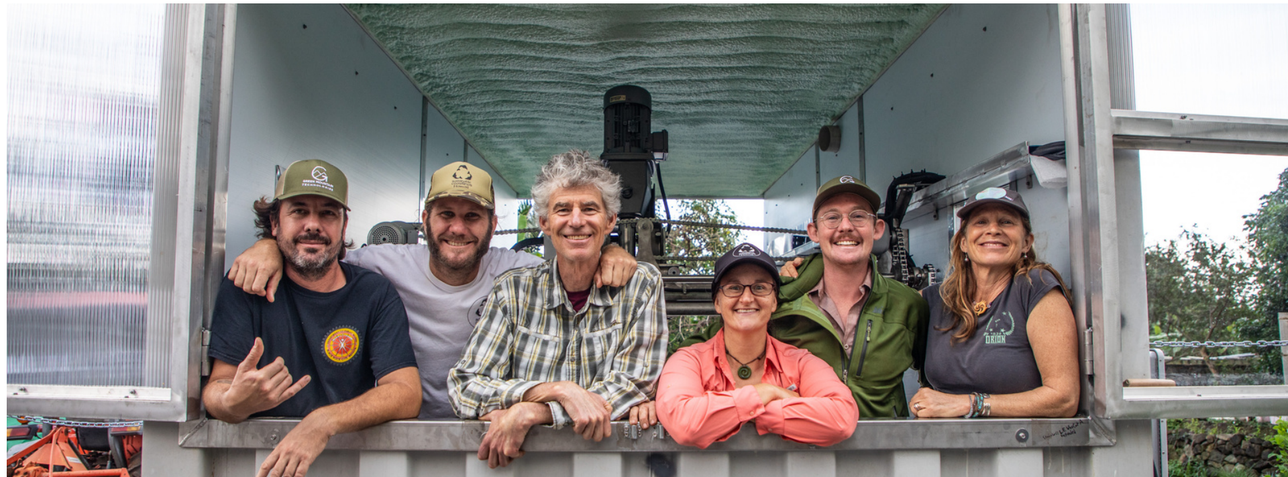


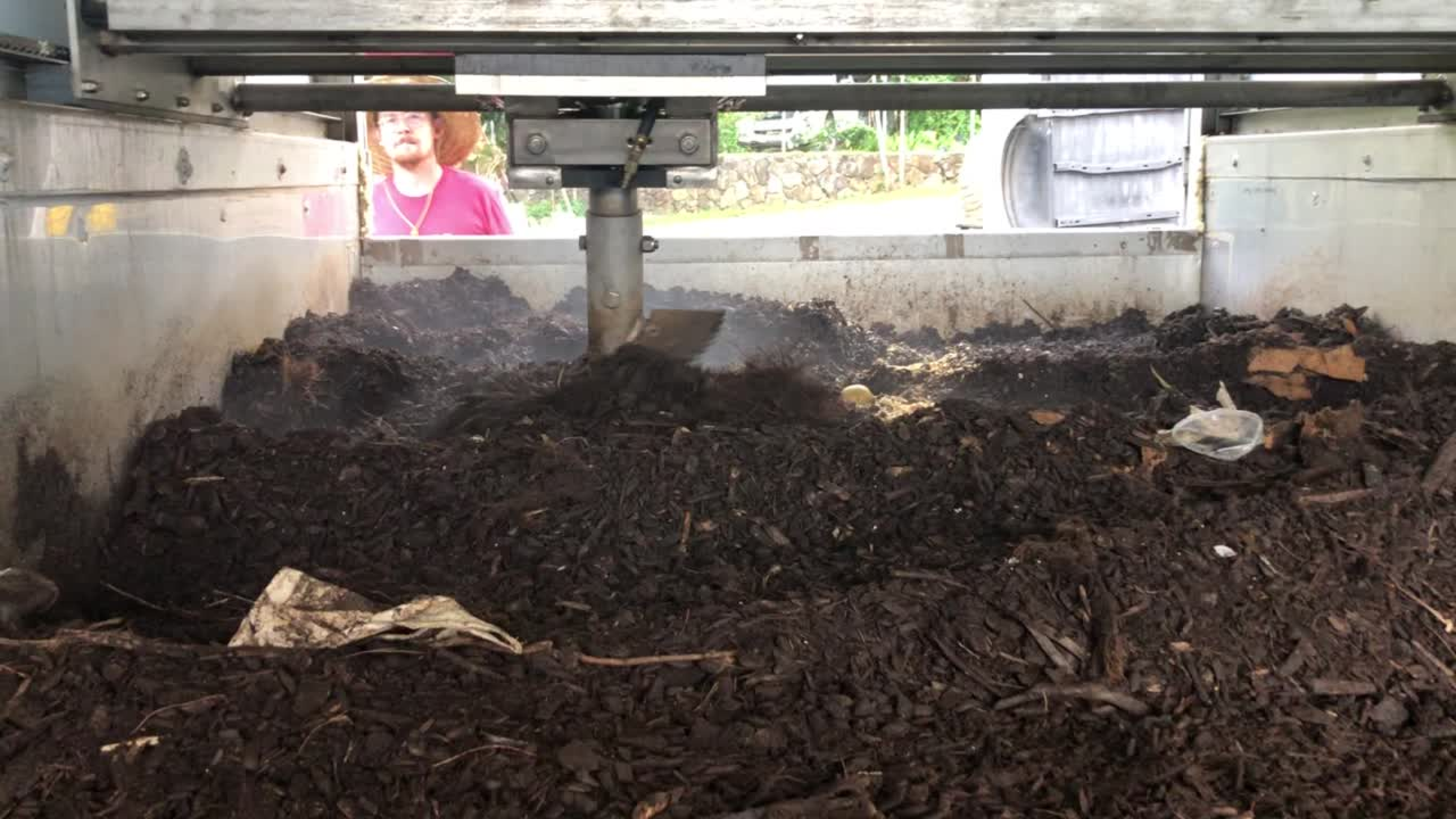


First Compostable Products Added



"It would take hours with a tractor to do what this machine can do in minutes."
– Sean Anderson, Full Circle Farm





Up Next

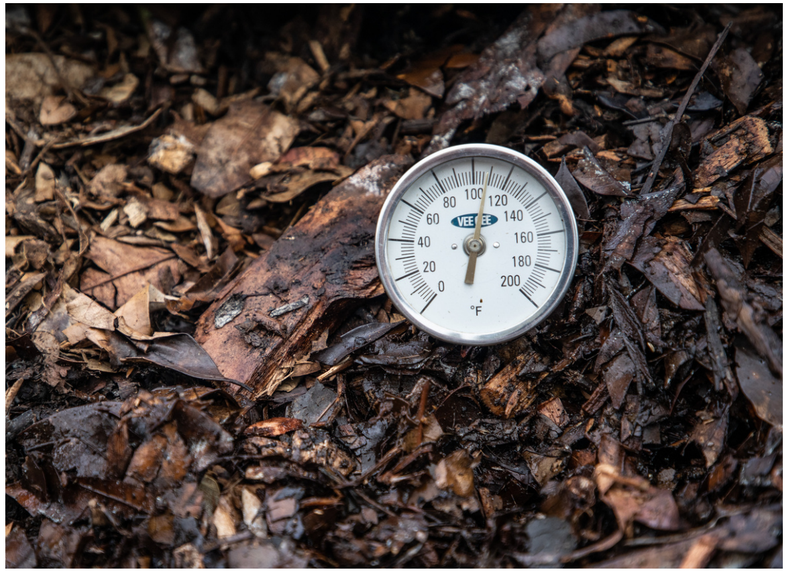
Why a Microgrid?

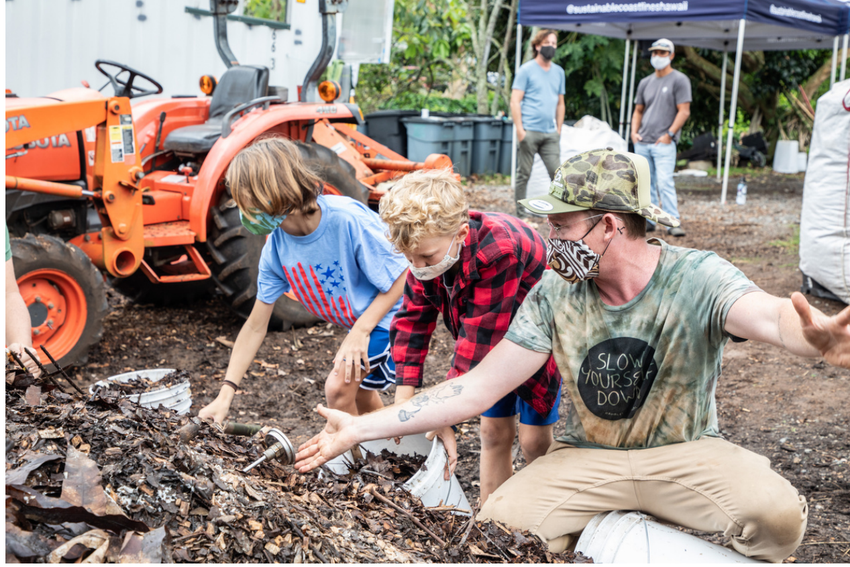
- Resilience - diversified locations are less susceptible to shut downs of the system and can serve biggest "waste" generators like:
  - Universities, Prisons, Hotels, Farms
- Minimized Transport = reduced emissions
- On-site sustainability is part of **circular designs** that are the solutions
- Adaptability: Diversified site designs
- Incremental Costs and Expansion
- Community engagement and buy-in

Data, Data, Data

2021 will focus on collecting data associated with the composting machine in the following target areas:

- Amount of waste diverted from events, restaurants, schools, and community members
- Viability of composting alternatives to plastic and the chemical composition of resulting soils
- An analysis of compost as a viable economic generator in Hawai‘i
- The scalability of the project





Education & Workshops

While 2020 had its challenges for engaging school groups and new audiences throughout the height of the pandemic, we are confident in our ability to expand educational efforts in the new year. The following will be prioritized:

- Informational video workshops for online learning
- Hands-on learning with small school groups
- Tours for legislators and community stakeholders with the intention to expand a micro-grid of composting projects around the islands.

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Sign the pledge