



# The World's First Community Scale Microdigester Coproducing RNG & Organic Biofertilizer

## Executive Summary

[Vashon Bioenergy Farm \(VBF\)](#) is creating a more circular and carbon-negative economy by transforming 8,000 pounds of organic waste daily into 100+ gasoline gallon equivalents of renewable natural gas (RNG) clean fuel for vehicles and buildings, and 800+ gallons organic biofertilizer for local farms. To do so, VBF installed a Chomp **Core 1500** anaerobic microdigester next to a commercial food producer. Situated on Vashon-Maury Island, WA in [King County](#), this facility is a premier example of **Community Supported Biocycling®** and represents a paradigm shift in community waste and resource management. VBF was developed in partnership with [Flow](#) and [Zero Waste Vashon](#), sponsored by WA Dept. of Commerce Clean Energy Fund and the WA State Housing Finance Commission Sustainable Energy Trust, commissioned in 2019, and relocated in 2026 by [Chomp Energy](#), FKA Impact Bioenergy Inc., [acquired by Martin Energy Group, LLC](#).

## Project Profile

Detail	Description
Location	Vashon-Maury Island, King County, WA
System Type	Chomp Core 1500

Detail	Description
<b>Feedstock Source</b>	Island Spring Organics (Tofu Factory) & Community Waste
<b>Daily Capacity</b>	8,000 lbs of organic matter
<b>Annual Capacity</b>	1,500 tons/year
<b>Partners</b>	Chomp, Flow, <a href="#">Island Spring Inc. dba Island Spring Organics</a> , Zero Waste Vashon
<b>Capital Investment</b>	~\$1,750,000
<b>Payback</b>	~3.5 years

## The Challenge: Escalating Fuel Costs, Organics Management Law Compliance & Closing the Loop on an Island

Washington State and island communities such as Vashon face escalating costs, and logistical and environmental challenges surrounding the state's [Organic Waste Management Law](#). Traditional methods involved the long-haul export of waste, resulting in high transportation costs and significant carbon emissions.

- **Waste Volume:** The nearby Island Spring tofu factory and community generated tons of organic residue daily.
- **The Cost of "Away":** Exporting waste removes valuable nutrients from the local ecosystem and relies on fossil fuels for transport.
- **Energy Needs:** The island required resilient, renewable energy sources to augment intermittent power like wind or solar.

## The Solution: Chomp Core Technology

Chomp deployed its **Core 1500 system**, a modular, prefabricated anaerobic digester designed specifically for community-scale operations. Unlike massive industrial facilities that take years to build, Chomp's units are compact, odor-free, and rapidly deployable.

**How it Works:**

1. **Input:** The system accepts up to 8,000 lbs/day of commercial food waste, including tofu byproducts, and source separated organics (SSO) from the surrounding community.
2. **Digestion:** Naturally occurring microbes break down the organic matter inside the sealed Chomp unit.
3. **Outputs:** The process captures biogas for energy and produces nutrient-rich biofertilizer.

## Community Supported Biocycling®: The Flow Partnership

VBF exemplifies the *Community Supported Biocycling®* model. This approach moves beyond simple waste disposal to create a more circular economy of resources within the local economy.

### 1. Renewable Energy Generation (RNG)

The VBF system includes an integrated biogas upgrading system. It converts waste into RNG, stored using Adsorbent Natural Gas (ANG) technology.

- **Vehicle Fuel & Industrial Symbiosis:** The site produces up to **125 Gasoline Gallon Equivalents (GGE)** per day to power medium- and heavy-duty vehicles, and to replace other fossil fuels such as natural gas from the Puget Sound Energy gas grid.
- **Grid Independence:** This fuel is enough to remove over 2,700 fossil-fuel cars from the road annually or power a small fleet.
- **Resiliency:** Alternatively, the biogas can be used to cogenerate **50 kW 24×7** of electricity for Batteries Energy Storage Systems and a comparable amount of heat, however a stationary generator has not yet been installed.

### 2. Regenerative Organic Agriculture (Biofertiligation)

The digestion process reclaims nutrients and water, producing a probiotic plant food that replaces chemical fertilizers.

- **Output:** The site coproduces up to **950 gallons** of organic liquid fertilizer per day.
- **Application:** The nutrient water is transported to local growers, such as **Matsuda Farm**, to offset fertilizer costs and improve soil health.
- **Capacity:** The output is sufficient to fertilize **8+ acres** of climate smart agriculture, capable of producing **1.8 million heads of lettuce** annually and **sequestering 25,000 MTCO<sub>2</sub>e per year in soil**, while being compatible with no-till and regenerative organic farming practices.



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