



Vashon Island Advanced Bioenergy Co-op – [WA Dept. of Commerce Clean Energy Fund 2, RD&D Round 3](#) | [King County Food Waste Incentives for Non-Residential Targets](#)

Project Overview



Summary

The goal is to demonstrate a **highly-repeatable** model for hyperlocal food “waste” conversion to renewable resources at a **community scale** (up to 5,000 lbs./day), that stimulates climate action and a circular economy, while promoting food and energy independence. Impact Bioenergy (IB) will design, build, co-own, co-operate and maintain their **AD 185-2 RNG series NAUTILUS** microdigester, as a “quintgeneration” system that cogenerates: (1) renewable natural gas (RNG), (2) **heat**, (3) **power**, (4) **renewable, food-grade carbon dioxide**, and (5) **organic plant food** (which enables conservation agriculture and remediation).



With cooperators identified by the above logos, commercial food “waste” will be collected, bio-converted and utilized on-island. The project is designed to develop a highly-repeatable model called **CSB** (Community Supported Biocycling) to recover **nutrients, energy, water, carbon and organic matter** from up to 5,000 lbs. per day of non-residential biomass resources into approx. 13.3 MMBtu per day of **RNG** and 570 gallons per day of **organic biofertilizer (Probiotic Plant Food & Soil Booster)**. RNG can be compressed into approx. **100 diesel gallons equivalents for school buses** and/or converted via micro-CHP and fuel cell into **2.5+ MWh of process heat** and **1.25+ MWh electricity per day** for electric vehicles, portable power stations and grid resiliency.

Deliverables

Tasks to **design, build, co-own and co-operate a community-scale NAUTILUS AD 185-2 RNG system**. **Potential Phase II stakeholders include Vashon Island School District and Western Washington Clean Cities:**

1. Finalize feedstock and take-off agreements with a phased approach: **Community Benefit Agreement**
2. Establish **co-op model and matching funds totaling \$1.5 million**
3. Develop front end **CSB user interface** and back end IoT operating system
4. Fabricate, deliver and install **NAUTILUS AD 185-2 RNG** with operating system, with **phased approach for alternative fueling for vehicles**
5. **Co-operate, co-locate greenhouse and continuously improve portability of energy applications** and report on performance metrics



Schedule

Set up and begin project implementation
Ongoing implementation, monitoring and reporting

June 2017 with deployment by June 2018
through June 2019

Vashon Bioenergy Farm, LLC
Project Financing
\$1.05MM CapEx
\$0.50MM OpEx (2016 - 2019)

