



NAUTILUS High-Solids Organic-waste Recycling System with Electrical Output

**High solids Organic waste Recycling System with Electrical output
AD 185 Series Portable and Modular Bioenergy System
1,000 to 5,000 lbs. per day for
Food, Paper, Grass, Liquids Recycling**

DIVERT WASTE. GENERATE ENERGY.



The NAUTILUS, 185 Series Bioenergy Systems are designed to provide on-site generation of energy from food waste and similar organic materials. This can reduce any facility's environmental footprint by offsetting trucking offsite to distant facilities, while also offsetting less sustainable forms of energy with self-generated renewable energy. The 185 Series also produces valuable fertilizer. This means local soil resources are conserved, reducing the need for agrichemicals and providing the local community with a food lifecycle. Recycled organic matter can return to the soil as sequestered carbon as close to home as possible. This is a completely new innovation in organics conversion by developing a local, community based, farm-to-table- and back to farm, life cycle. We call this

Food to Renewable Energy to Fertilizer & Soil Improvement to Food Again.

We consider the handling of all organic materials from a resource-based perspective, rather than a disposal perspective. We use life cycle thinking to reduce waste, lower energy consumption, reduce traffic intensity and transport, and retain employment and the dollars associated with commercial transactions inside each community.

Leadership in Engineering

The 185 Series has broken down the complexity and cost barriers seen in other AD systems through the use of our proprietary design, and sourcing the manufacturing and engineering in North America. Our base of manufacturing and support is in the Pacific Northwest. The systems are delivered complete and ready for utility connections to power, water, and sewer. In some cases installation and connection can be done in one day. Our technology is designed to accommodate the wide variations and calorific strength of source-separated food and fiber better than other systems. The breakthrough that Impact has developed involves a 4-phase anaerobic digestion process coupled with full enclosure and a separate 4-phase odor control system. This technology allows for a more stable digestion process without the need for manure or biosolids. It also allows for high methane recovery and liquid-solids separation so each output can be directed to the highest and best use locally. This is a robust and simple AD design. The system is designed for minimal labor and expenses, small footprint, and architectural flexibility.

Achieve Real Sustainability and Economic Performance Simultaneously

The energy production starts at 111,000 BTU/hour continuously, and is expandable to 555,000 BTU/hour. Organic feedstock input rates start at 1,000 lbs. per day, and are expandable to 5,000 lbs. per day. Gas storage is included to allow daily energy production to match peak demand patterns. Feedstock preparation, power generation, output separation, and odor control are included. The 185 Series empowers our customers to achieve energy sovereignty and utilize their energy resources to the fullest potential. We can configure both the energy output and the organic

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matter output to maximize economic, environmental, and social value. Power can be prime power, heat, hot water, electricity, lighting, or RNG vehicle fuel. Organic matter can be produced as liquid, emulsion, compost, fertilizer, or dried pellets.

The Impact Bioenergy Advantages

- An ability to reduce disposal, recycling, and energy costs simultaneously
- Minimal space requirements using onsite or local community based systems
- Quick deployment and easily expandable
- Highly Adaptable Architectural and Environmental Design – especially on appearance and odor control
- Onsite electricity and heat generation, or other forms of energy (lighting, hot water, etc.).

We understand that communities and organizations are seeking more sustainable and affordable sources of energy and methods of waste diversion. The best solutions are located at the source, yielding the greatest economic and environmental impact.

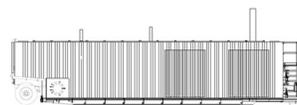
Our systems are ideally suited to small to mid-size communities, campuses, and commercial generators of organic waste. The 185 Series offers continuous distributed, *either* base load *or* peak load energy, reducing reliance on power transmission across the landscape, and providing energy independence and security.

EASY TO DEPLOY AND SCALE UP

The 185 Series prefabricated bioenergy units drive down capital costs and allow delivery and installation quickly. Expansion is simple with minimal space and connection requirements. These systems can be deployed onsite and within an urban environment allowing for the distributed generation and enhancement of smart grid systems. The 185 Series can convert kitchen trim, post-consumer dining room food scraps, meat, grease, oil, all edible liquids, seafood, dairy products, starch, sugar, fruit, vegetable, bones, soiled paper products, napkins, tissue, paper towels, waxed paper, grass clippings, leaves, small sticks, wood tableware (stir sticks, toothpicks, spoons, knives, forks), fats, fryer oil, grease trap waste, beverages, alcohol, soup, condiments, eggshells, glycerin, etc. Product destruction and depackaging is possible with our separate thermo-mechanical systems. These systems can accept products in cans, bottles, hard plastic, and soft/film plastic – recovering both the packaging and the contents for diversion.

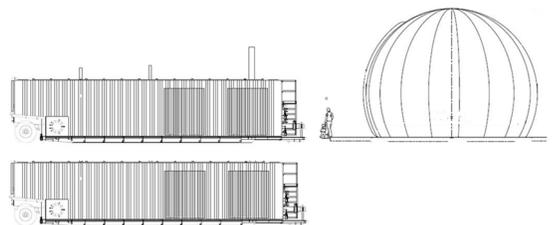
MINIMUM SYSTEM

400 square feet
2.66 MMBTU per day gross energy output
280 kWh per day electric output
1,000 lbs. per day



MAXIMUM SYSTEM

2,500 – 5,000 square feet
13.32 MMBTU per day gross energy output
1,400 kWh per day electric output
5,000 lbs. per day



CONTACT IMPACT BIOENERGY jan.a@impactbioenergy.com Attn: Jan Allen (206.250.3242)

