



# Organics to Energy Lifecycle



**Vanguard**  
RENEWABLES

# The American farmer is under attack and the food industry faces major challenges.

Food is a powerful energy source, yet in the United States most of the excess food waste from processors and consumers still ends up in landfills with harmful consequences for the community. At the same time, the American farmer is under extreme pressure to reduce greenhouse gas emissions and groundwater contamination from agricultural waste. The common problem is that both landfills and manure emit methane, a greenhouse gas that is 20 times worse for the environment than CO<sub>2</sub>. Vanguard Renewables safely combines these two waste streams and processes them using anaerobic digestion. We turn waste into Farm Powered™ clean renewable energy and provide significant sustainability for farms and food processors.

## The Organics to Energy Lifecycle

- Closed loop process
- Converts the energy potential in agricultural & food waste into electricity
- Bugs digest the waste & create burnable methane for our generators
- Farmers get cheaper power, organic fertilizer & free heat
- Europeans have been doing it for decades — safely and cleanly



## Your Waste is Our Feedstock!

Vanguard Renewables is a farm-based, anaerobic digestion plant owner/operator committed to providing feedstock suppliers a safe, certifiable way to dispose of organic production waste and obtain renewable energy.

- Single point of organics disposal
- Safe, certifiable food waste solution
- Reduces odor and pests
- Fixes energy & disposal cost for 10 years
- Increases Sustainability Index



**You get a fixed energy and disposal cost and change the life of a farmer.**



Working with Vanguard is an important part of our sustainability program. **We get cost effective renewable energy to power our plant** and we help to sustain a local farm for future generations.

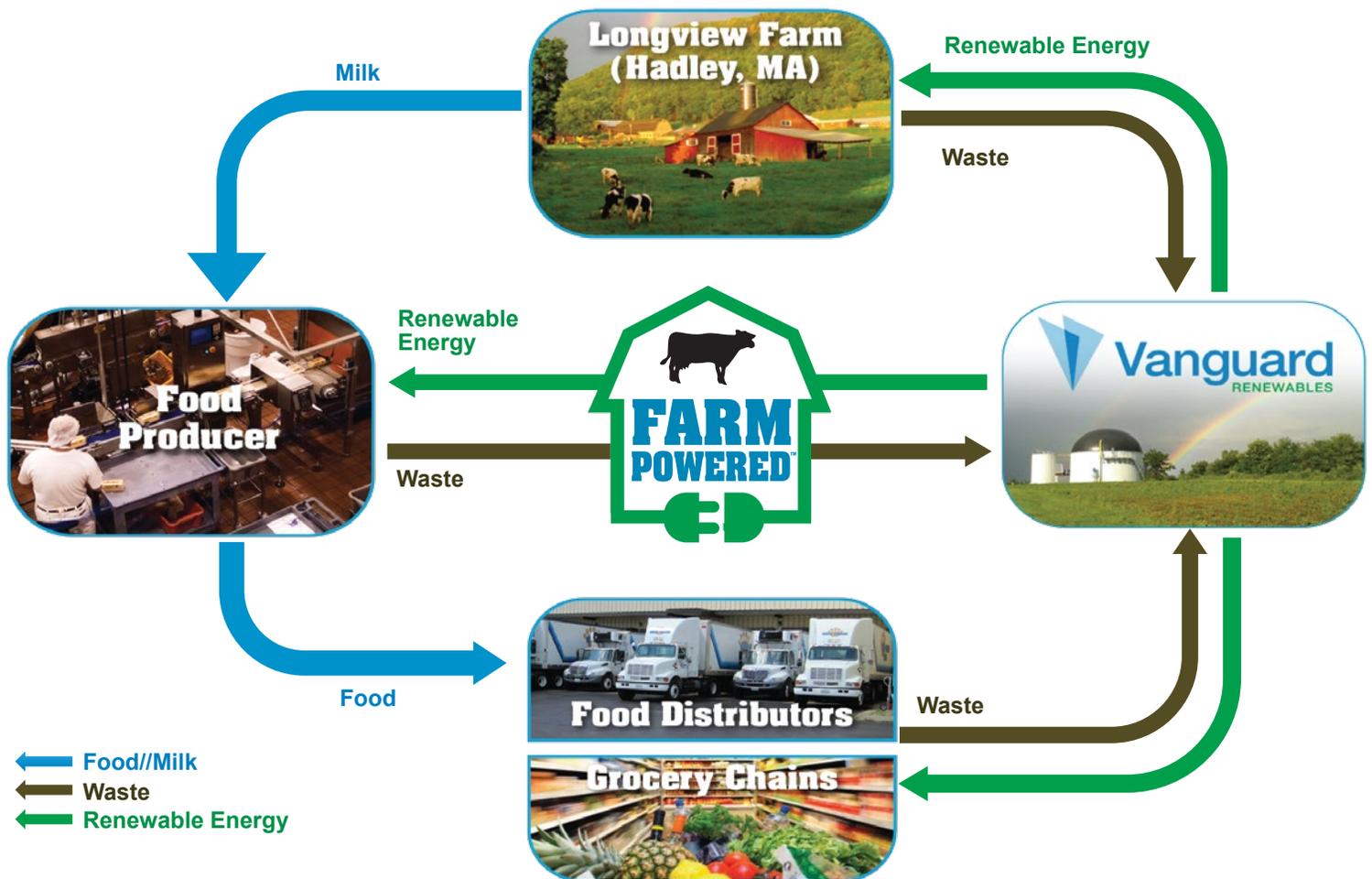
Chris Crowley  
Executive Vice President and Treasurer, Polar Beverages



“The Vanguard Renewables **Farm Powered** closed-loop program helps Cabot meet goals for landfill diversion and energy. We send a butter byproduct to the anaerobic digester on co-op member Barstow’s Longview Farm. The digester turns the organics into energy, which we purchase via net metering as the electricity needed to churn Cabot butter.”

Jed Davis, Sustainability Director, Cabot Creamery Cooperative

## Energy moves from the farm to the production facility to the retail store and back to the farmer.



### Here's how it works:

#### Feedstock: Farm Waste + Your Organic Foodstock

Non-farm waste is delivered via sealed trucks and combined with manure at the host farm.

#### Process: Mixing + Heat

In a sealed biodigester tank at the farm, microorganisms convert sugars, fats, and other compounds into biogas, reducing greenhouse gas emissions by 85%.

#### Output: Electricity + Fertilizer

Biogas generates renewable energy and heat for the farm, and equivalent energy for the surrounding community and your production facility. The remaining digested material is nutrient rich, natural fertilizer used to increase local food production.



# Table to Farm Renewable Energy Leaders



Our leadership team understands your waste disposal and energy acquisition challenges and costs. With backgrounds in food manufacturing, clean energy, anaerobic digester development and operations, and project construction, the Vanguard team brings their breadth of experience to the business of zero-waste, full-cycle organics reuse.

**“Our team came together to be energy innovators but what we quickly learned was that helping support the American farm was the real motivating force.”**

*John Hanselman, Executive Chairman, Vanguard Renewables*

Food is energy and Farm Powered closed loop organics reuse is a safe and efficient clean energy trifecta. It offers an innovation boost to the American farmer, a single point organics waste disposal solution for American business, and affordable energy for American communities with an 85% reduction in green house gases.

Vanguard Renewables is committed to placing Farm Powered anaerobic digesters on farms across North America. Our Farm Powered closed loop organics to energy lifecycle solves the organics waste disposal challenges of American business and American farms, generates renewable energy, and provides organic fertilizer and clean water for farm use.



20 Walnut St. ■ Suite 308 ■ Wellesley, MA 02481 ■ USA ■ 781-232-7597

[www.vanguardrenewables.com](http://www.vanguardrenewables.com)