

Vermont Digesters with Nutrient Recovery

Steve Rowe
President and CEO
Newtrient LLC
February 8, 2016



Newtrient Board of Managers



Maryland & Virginia
Milk Producers Cooperative Association, Inc.



Vision, Mission & Strategies

Vision

For dairy farmers to be the environmental stewards of choice

Mission

Newtrient helps all dairy farmers reduce the environmental footprint of manure while enhancing their economic opportunities and their social license to operate

Strategies

1. Technology advancement – Newtrient advances manure-based management and product technologies regarding:
 - Energy production (e.g. – Farm to Fly)
 - Nutrient recovery
 - Value-added, manure-based products
2. Environmental asset trading – Newtrient advances public and private environmental asset trading opportunities
3. Regulatory, legislative and risk management expertise – Newtrient selectively provides regulatory, legislative and risk management expertise for manure-based opportunities and challenges
4. Education and outreach – Newtrient helps dairy farmers, technology providers, manure-based product developers and other stakeholders assess manure-related opportunities and challenges

Vermont Digesters with Nutrient Recovery

Goals:

Work with dairy farmers and milk cooperatives, Vermont Dept. of Ag., milk cooperatives, Green Mountain Power and others to:

- Build ten anaerobic digester systems
- Produce renewable energy
- Produce value-added products from manure (F2F)
- Add nutrient recovery technology
- Foster development of a water quality credit program for Vermont dairy farms



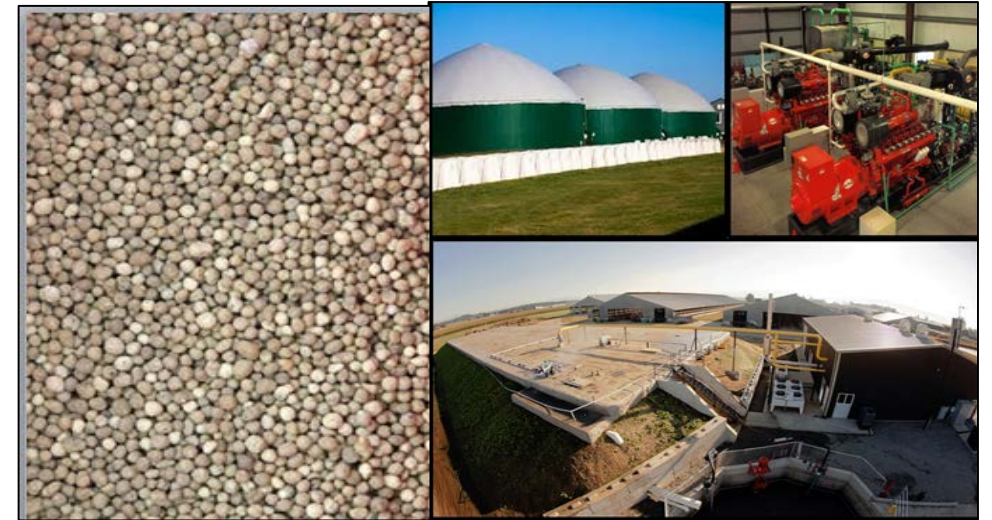
Vermont Digesters with Nutrient Recovery – Outcomes

An economic analysis of ten 150 kW dairy digester systems totaling 6,000 cows indicates an annual net revenue potential of \$ 2.0 million from energy, but at this time no revenue is available for nutrient recovery.

Annual environmental benefits may include:

| | |
|----------------------------------|-----------------------------------|
| Renewal energy generation | 7.2 million kWh/yr. |
| Carbon credits | 15,000 tons/yr. |
| Renewable energy credits | 7.2 million/yr |
| Organic fiber | 29,000 yds³/yr. |
| Recovered Phosphorus* | 93 tons/yr. |

* If economic mechanism is available to support this technology



Newtrient

Jerry Bingold

VP Energy and Business development

O: 847.627.3378

jerry.bingold@newtrientllc.com

