A PHOSPHORUS MANAGEMENT SYSTEM

There is overwhelming agreement that Vermont needs to address its clean water problems. The Environmental Protection Agency has estimated that the state needs to invest more than $2 billion over the next 20 years in remediation and prevention programs.

Farmers are being targeted for criticism primarily due to phosphorus runoff which results from applying fertilizer and manure to their fields. They are ready and willing to share the burden, but need help from government to put in place the systems and equipment necessary to effectively manage their herds' manure. The state already mandates that Vermont farms follow nutrient management plans as it is generally accepted that nutrient management is an integral component of water quality improvement.

There are technological solutions for manure management that some of Vermont's larger dairies have used successfully for more than a decade. A methane digester transforms manure into rich fertilizer for next season's crops, compost for your garden, bedding for the cows, and methane gas which gets converted into electricity. This abundantly renewable energy source, which is known locally as Cow Power®, also provides dairy farmers with an additional revenue source.

Current manure digestion technology is economically viable only for big farms, and even they find it financially challenging to install the advanced technologies that can separate phosphorus from digester solids. Smaller farms can't afford the capital investment to install a methane digester and generator, nor do they have access to one. We need public as well as private investment in the systems and technologies to allow manure to be partially processed on the farm and the 'goods' transported to regional digestion facilities where they can be further separated and converted into electricity and renewable natural gas. These regional facilities could also process the large amount of food waste that will be diverted, by legislative mandate, from Vermont landfills by 2020.

Unlike investment in solar and wind projects, methane-to-electricity infrastructure receives no favorable tax benefits. While the U.S. Congress and the Vermont Legislature discuss public policy around renewable energy and water cleanup, methane gas can be converted into electricity as well as be injected into existing pipeline infrastructure as a renewable thermal fuel. Remaining digester solids can be composted and used as consumer fertilizer or applied to specifically targeted farm fields.

There is exciting technology being researched developed to remove and recover phosphorus from water. The George Barley Water Prize, presented by The Everglades Foundation, will award an unprecedented $10 million to the researcher or researchers capable of developing a cost-effective process for recovering phosphorus while yielding clean water from natural water bodies on a globally-applicable scale. More details are available here: www.barleyprize.com

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