



Senate Fiscal Agency
P. O. Box 30036
Lansing, Michigan 48909-7536



BILL ANALYSIS

Telephone: (517) 373-5383
Fax: (517) 373-1986
TDD: (517) 373-0543

Senate Bill 251 (Substitute S-1 as reported)
Senate Bill 538 (as reported without amendment)
Sponsor: Senator Cameron S. Brown
Committee: Agriculture, Forestry and Tourism

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RATIONALE

The farming industry is facing a number of environmental challenges, driven in part by governmental regulations, the proximity of development for nonagricultural use, the need to improve productivity, and the desire for good environmental stewardship. At the same time, emerging technology is available to develop alternative fuels from "biomass", which typically refers to agricultural crops, residue, and waste, such as food processing byproducts and animal waste. Methane digesters, for example, can capture the methane emitted from the decomposition of manure, which can then be turned into electricity. Other systems, such as biomass gasification, can produce fuel through the thermal processing of agricultural and animal waste. In order to help the agricultural industry take advantage of this technology, it has been suggested that these systems be exempted from the sales tax and that loans be made available to eligible farmers for projects that produce energy through the use of agricultural biomass.

CONTENT

Senate Bill 251 (S-1) would amend the General Sales Tax Act to provide a tax exemption for methane digesters and other thermal decomposing systems used in agricultural operations. Senate Bill 538 would amend Part 145 (Waste Reduction Assistance) of the Natural Resources and Environmental Protection Act to allow an eligible farmer to receive a loan from the Small Business Pollution Prevention Assistance Revolving Loan Fund for a pollution prevention project involving

the use of agricultural biomass by an energy production system.

The bills are described in detail below.

Senate Bill 251 (S-1)

The General Sales Tax Act exempts from taxation property actually used in agricultural operations (as described below). Under the bill, property used in agricultural operations would include a methane digester, a methane digester electric generating system, a biomass gasification system, and a thermal depolymerization system.

A person claiming an exemption for a methane digester or a methane digester electric generating system would have to submit an affidavit to the local tax collecting unit, attesting that the methane digester or electric generating system was located on real property verified by the Michigan Department of Agriculture as meeting all applicable requirements under the Michigan Agriculture Environmental Assurance Program, and that the person had not been found guilty of one or more criminal violations, or found responsible for two or more civil violations, under Part 31 (Water Resources Protection) of the Natural Resources and Environmental Protection Act (NREPA) within a one-year period immediately preceding the date the affidavit was submitted to the local tax collecting unit. (The Michigan Agriculture Environmental Assurance Program, or MAEAP, is described below in **BACKGROUND.**)

The bill would define "methane digester" as a system designed to facilitate the production, recovery, and storage of biogas from the anaerobic microbial digestion of animal or food waste. "Biogas" would mean a mixture of gases composed primarily of methane and carbon dioxide. "Methane digester electric generating system" would mean a methane digester and the apparatus and equipment used to generate electricity or heat from biogas or to store biogas for the future generation of electricity or heat.

"Biomass gasification system" would be defined as apparatus and equipment that thermally decompose agricultural, food, or animal waste at high temperatures and in an oxygen-free or a controlled oxygen-restricted environment into a gaseous fuel, and the equipment used to generate electricity or heat from the gaseous fuel or store the gaseous fuel for future generation of electricity or heat. "Thermal depolymerization system" would mean apparatus and equipment that use heat to break down natural and synthetic polymers and that can accept only organic waste.

Presently, property used in agricultural operations includes machinery used to prepare the crop for market that is operated incidental to a farming operation that does not substantially alter the form, shape, or substance of the crop, and is limited to cleaning, cooling, washing, pitting, grading, sizing, sorting, drying, bagging, boxing, crating, and handling, if at least 33% of the volume of the crops processed in the year ending on the applicable tax day, or in at least three of the immediately preceding five years, were grown by a Michigan farmer who owns or uses the crop processing machinery.

Senate Bill 538

Under Part 145 of NREPA, the Department of Environmental Quality (DEQ) must spend money from the Small Business Pollution Prevention Assistance Revolving Loan Fund for loans to small businesses to implement pollution prevention projects. For each loan, the DEQ must disburse the money to a lending institution that has entered into a loan participation agreement with the Department.

The bill would amend the definition of "pollution prevention" to include the use of

agricultural biomass by a qualified agricultural energy production system. To be eligible for a loan from the Fund, an applicant seeking to implement this type of pollution prevention project would have to be an eligible farmer, and be verified under MAEAP. The applicant also would have to have applied for one or more of the following:

- A grant under the renewable energy systems and energy efficiency improvements program created under 7 USC 8106.
- A conservation innovation grant under 16 USC 3839aa-8.
- A grant from any other Federal program that provides assistance for qualified agricultural energy production systems.
- A contract to receive a cost-share payment for a structural practice under the environmental quality incentives program under 16 USC 3839aa to 3839aa-7.

Presently, a loan from the Fund may not exceed \$150,000 and a small business may not receive more than one loan in any three-year period. Under the bill, a loan for a project involving agricultural biomass could not exceed \$200,000. This type of project could not receive more than one loan, whether or not it was a small business.

The bill would define "eligible farmer" as a person who processes agricultural products or a person who is engaged as an owner-operator of a farm in the production of agricultural goods as defined in Section 35(1)(h) of the Single Business Tax Act. The term would not include a person who had been found guilty of a criminal violation, or determined responsible for two or more civil violations, under Part 31 of NREPA within a one-year period immediately preceding the loan application date. (Under Section 35(1)(h) of the Single Business Tax Act, "production of agricultural goods" means commercial farming, including cultivation of the soil; growing and harvesting of an agricultural, horticultural, or floricultural commodity; dairying; raising of livestock, bees, fish, fur-bearing animals, or poultry; or turf or tree farming.)

The bill would define "agricultural biomass" as residue and water generated from the production and processing of agricultural

products, animal waste, or food processing wastes.

“Qualified agricultural energy production system” would mean the structures, equipment, and apparatus to be used to produce a gaseous fuel from the noncombustive decomposition of agricultural biomass and the apparatus and equipment used to generate electricity or heat from the gaseous fuel or store the fuel for future generation of electricity or heat. A system could include, but would not be limited to, a methane digester, biomass gasification technology, or thermal depolymerization technology.

MCL 211.9 (S.B. 251)
324.14501 & 324.14513 (S.B. 538)

BACKGROUND

MAEAP

The Michigan Agriculture Environmental Assessment Program was established in 1998 by a coalition of agricultural producers, commodity groups, State agencies, and conservation and environmental interests. According to its website, “MAEAP is a voluntary, pro-active program designed to reduce producers’ legal and environmental risks. It teaches effective land stewardship practices that comply with state and federal regulations and shows producers how to find and prevent agricultural pollution risks on their farms.”

The website describes three phases of MAEAP. Phase I, education, is designed to raise awareness of practices that may prevent or reduce on-farm legal and environmental risks. Phase II, on-farm assessment, focuses on assessing the environmental risks on a farm and developing a farm-specific plan to address identified risks. During this phase, a comprehensive nutrient management plan (CNMP) is written, and a timeline for implementing changes is developed.

Phase III, third-party verification, allows producers to request third-party verification from the Michigan Department of Agriculture (MDA) after they have developed a CNMP and are following their schedule of implemented practices or improvements. To maintain verification, producers must request an MDA visit every three years.

Previous Legislation

Senate Bill 955 of 2003-04 proposed a sales tax exemption for methane digesters, methane digester electric generating systems, biomass gasification systems, and thermal depolymerization systems. The bill was approved by the Senate and House of Representatives but vetoed by Governor Granholm. According to the Governor’s veto message, “...this exemption would provide financial rewards for generators of high volumes of manure, such as factory farms, including violators of environmental protection laws, while failing to address the threat to our groundwater posed by the nitrates and other pollutants that are the byproducts of high concentrations of manure.”

ARGUMENTS

(Please note: The arguments contained in this analysis originate from sources outside the Senate Fiscal Agency. The Senate Fiscal Agency neither supports nor opposes legislation.)

Supporting Argument

The proposed sales tax exemption and loan program would assist farmers who are interested in building and operating methane digesters and other energy production systems that use agricultural biomass. Methane digesters are concrete tanks or covered lagoons that take advantage of a natural process called anaerobic digestion, in which bacteria feed on manure in an oxygen-free environment. This process produces two products: biogas, which is a mixture of methane and carbon dioxide and may be burned off or used to generate heat or electricity; and compost, which is less odorous and without most of the pathogens found in raw manure.

While the biogas produced by a methane digester may generate enough electricity to cover a farm’s electrical needs or even be sold back to the electric company for a small profit, the primary purpose of digesters is to manage manure odor and pathogens. Because a single dairy cow produces about 120 pounds of wet manure a day, managing it is a significant part of farming. Most farmers apply manure to fertilize their fields, but doing so can result in strong odors that bother neighboring residents. In addition, spreading raw manure can cause pathogens like *E. coli* to be flushed into waterways. A certain amount of methane and ammonia,

both greenhouse gases, escapes into the atmosphere when manure is spread. Spreading the compost from a methane digester nearly eliminates the bacteria and odor found in manure. Using the methane for energy eliminates an additional pollutant.

The liquid and solid byproducts from methane digestion can be used as fertilizer, and the solids can be put to other uses, such as livestock bedding. The quality of the fertilizer also is enhanced, since plants can use the mineralized form of nitrogen more quickly. In addition, methane digesters offer economic savings from the production of renewable energy, which also can be sold. Thus, digesters not only reduce pollution but create value-added products. For example, a greenhouse in Hillsdale County is said to be interested in purchasing both the byproduct and the energy from a methane digester, if one is built in the vicinity.

Methane digesters have been in existence since the 1970s but no functioning digesters exist in Michigan (although one dairy farm recently received a Federal grant for a digester). This is due in part to the digester's high start-up costs. Depending on the scope of the system and the number of animals, a digester reportedly can cost between \$200,000 and \$2 million. Under Senate Bill 251 (S-1), farmers would not have to pay the sales tax on this expensive equipment or on the other thermal decomposing systems listed in the bill. Senate Bill 538 would allow eligible farmers to seek a loan for pollution prevention projects involving these systems. To obtain a loan under Senate Bill 538 and to receive a tax exemption for a methane digester under Senate Bill 251 (S-1), a farmer could not have a history of water pollution violations, and the farm would have to be verified under the Michigan Agriculture Environmental Assurance Program.

Response: Pollution prevention projects involving agricultural biomass systems already may be eligible for loans from the Small Business Pollution Prevention Assistance Revolving Loan Fund, which provides low-interest loans to small business owners seeking to reduce or eliminate waste generated, energy used, or hazards to public health associated with waste generated at the business. Rather than raising the loan limit from \$150,000 to \$200,000 for agricultural biomass projects only, perhaps

the bill should increase the limit for all loans from the Fund.

Opposing Argument

Although medium-sized farms might find methane digesters attractive and need the most economic assistance to obtain them, the cost of the digesters and the volume of waste required make them economically feasible only for the largest livestock producers. The systems are expensive to install and maintain, and most require at least 300 cows or 2,000 swine in order to become cost effective. The operations large enough to use a methane digester are multimillion-dollar concentrated animal feeding operations (CAFOs), which can afford to buy digesters without government subsidies. It would be inappropriate to give State tax breaks and loans to encourage CAFO proliferation when these huge farms are in part responsible for putting small and mid-size farms out of business, and when many have contaminated the air, water, and soil with their manure management practices. According to testimony on behalf of the Sierra Club, the CAFO that recently received a Federal grant for a methane digester had over 50 violations of the Clean Water Act.

Although it has been suggested that small or mid-size farms could combine their manure in order to make a methane digester affordable, doing so would require the transport of large quantities of animal waste, creating another potential environmental hazard and undermining the benefits of the digester.

Furthermore, while methane digesters could help farms better manage manure, they would not eliminate the farms' manure problems. Compost produced from digesters still contains high levels of phosphorus and nitrogen which, when spread on fields, can seep into groundwater or run off into surface water. Excess nutrients in the water lead to low dissolved oxygen levels in lakes and streams, which can kill fish and destroy the natural habitat. Although methane digesters may reduce some of the methane that contributes to the global warming, they can increase the amount of ammonia emissions, another greenhouse gas.

Response: The sales tax exemption under Senate Bill 251 (S-1) and the loans under Senate Bill 538 would not be limited

to methane digesters, but also would be available for other systems, including biomass gasification and thermal depolymerization.

Opposing Argument

Senate Bill 251 (S-1) is nearly identical to the 2003-04 proposal that Governor Granholm vetoed, Senate Bill 955. Although that bill did not require MAEAP verification, it did include a requirement that a person claiming a sales tax exemption for a methane digester not have been convicted of a criminal violation, or found responsible for a civil violation, under Part 31 of NREPA. Nevertheless, the Governor vetoed the bill on the ground that it would provide financial rewards for generators of high volumes of manures, including violators of environmental pollution laws.

Although both of the current proposals also would attempt to limit their benefits to farmers without a history of water pollution violations, the DEQ simply does not have the resources or the regulatory framework to monitor violations or enforce environmental laws, and few discharges actually are recorded as violations.

Legislative Analyst: Suzanne Lowe

FISCAL IMPACT

Senate Bill 251 (S-1)

The bill would have no fiscal impact on State or local government at the present time, because there are currently no methane digester electric generating, biomass gasification, or thermal depolymerization systems in Michigan. The bill could reduce revenue from what it otherwise will be in future years if technological improvements make the operation of these systems more efficient and less costly in terms of start-up capital costs. While there is no way to make a reasonable estimate on future use of these systems at this time, the fiscal impact of this bill probably would remain very small for the next few years.

Senate Bill 538

The bill would have no fiscal impact on the State. It would expand the uses of the revolving loan fund and allow larger loan amounts, but it would not make additional funds available.

The bill could result in indirect savings to the State due to the reduction of agricultural biomass disposed of through current waste disposal methods. This could lead to less pollution requiring treatment and a reduced demand for waste disposal sites.

Fiscal Analyst: Jessica Runnels

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This analysis was prepared by nonpartisan Senate staff for use by the Senate in its deliberations and does not constitute an official statement of legislative intent.