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BILL ANALYSIS



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Senate Bill 251 (Substitute S-2 as passed by the Senate)
Senate Bill 538 (Substitute S-1 as passed by the Senate)
Sponsor: Senator Cameron S. Brown
Committee: Agriculture, Forestry and Tourism

Date Completed: 6-15-05

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-2) 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 (S-1) would amend Part 145 (Waste Reduction Assistance) of the Natural Resources and Environmental Protection Act to allow loans from the Small Business Pollution Prevention Assistance Revolving Loan Fund for qualified agricultural energy

production systems. The bill also would increase the maximum amount of a loan from the Fund from \$150,000 to \$200,000.

The bills are described in detail below.

Senate Bill 251 (S-2)

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 (MDA) as meeting all applicable requirements under the Michigan Agriculture Environmental Assurance Program, and that the person had not been found guilty of a criminal violation, or found responsible for a civil violation that resulted in a civil fine of \$10,000 or more, under the Natural Resources and Environmental Protection Act (NREPA) within a three-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 (S-1)

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.

Currently, the definition of "pollution prevention" includes environmentally sound on-site or off-site reuse or recycling. Under the bill, this would include agricultural biomass by qualified agricultural energy production systems.

To be eligible for a loan from the Fund, an applicant for a qualified agricultural energy production system would have to be an eligible farmer or agricultural processor, or a for-profit farmer cooperative corporation. The applicant also would have to be verified under the appropriate system of the Michigan Agriculture Environmental Program administered by the MDA. In addition, within a three-year period immediately preceding the date the application was submitted, the applicant could not have been found guilty of a criminal violation under NREPA or found responsible for a civil violation under the Act that resulted in a civil fine of at least \$10,000.

The bill would define "eligible farmer or agricultural processor" 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. (Under that section, "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 on a farm or by farm cooperative members from the production and processing of agricultural products, animal waste, food processing waste, or other materials as approved by the DEQ Director.

"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 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 than they use untreated manure. 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-2), 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 (S-1) would allow eligible farmers to seek a loan for pollution prevention projects using agricultural biomass. To obtain a loan under that bill or to receive a tax exemption for a methane digester under Senate Bill 251 (S-2), a farmer could not have a history of environmental violations, and the farm would have to be verified under the Michigan Agriculture Environmental Assurance Program.

Response: To ensure that farmers and businesses were in current compliance with environmental laws, the bills should disqualify applicants who received a notice of violation from the DEQ and failed to correct it. The bills also should disqualify applicants who violated Federal, as well as State, environmental laws. In some situations, a particular activity or discharge might violate both Federal and State laws; after consulting with the U.S. Environmental Protection Agency (EPA), the DEQ might decide that the EPA is in a better position to enforce the law. Thus, a polluter might be convicted or found responsible in a Federal court for what also amounts to a violation of NREPA. The violator, however, still could receive a loan or a tax break under the bills.

Supporting Argument

The Small Business Pollution Prevention Loan Program 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 a business. Half of a loan comes from the Small Business Pollution Prevention Assistance Revolving Loan Fund, which was capitalized by the Clean Michigan Initiative bond approved by the voters in 1998; the other half is provided by a lending institution through a loan participation arrangement with the DEQ. In its fifth year of operation, the program has closed a total of 22 loans to date, and two are currently in the process.

The maximum amount of a loan from the Fund originally was \$50,000 but Public Act 334 of 2004 raised the limit to \$150,000, which means that a business may borrow up to \$300,000 with a bank's matching share. At the same time, Public Act 333 of 2004 increased the maximum number of workers that an eligible business may employ from 100 to 500. These changes enable more independent businesses to seek financing for projects that contribute to a healthy environment. Senate Bill 538 (S-1) would continue this progress by increasing the maximum amount of a loan from the Fund to \$200,000. With a financial institution's share, a business could borrow up to \$400,000 under the program for a pollution prevention project.

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 global warming, they can increase the emission of ammonia, another greenhouse gas.

Response: The sales tax exemption under Senate Bill 251 (S-2) and the loans under Senate Bill 538 (S-1) 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-2) 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 (Water Resources Protection) of NREPA. Nevertheless, the Governor vetoed the bill on the ground that it would provide financial rewards for generators of high volumes of manure, 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 NREPA 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. Furthermore, since MAEAP is a voluntary program, verification

under it does not necessarily mean that a farm is in compliance with environmental laws.

Legislative Analyst: Suzanne Lowe

FISCAL IMPACT

Senate Bill 251 (S-2)

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 (S-1)

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.