



*Testimony to the Senate Energy Policy and Public Committee
In Support of Senate Bill 725
By Granger*

Keith L. Granger, Chief Executive Officer

I would like to begin by providing a brief background of Granger.

Granger is a third generation, family-owned, Lansing-based business. Our 200 associates provide waste hauling services and operate two landfills, a recycling center, and a compost facility.

In 1985, Granger was the first in Michigan to develop and implement a commercial scale landfill gas project. Since that time, we have built seven landfill gas utilization projects in Michigan, generating nearly 30 megawatts of renewable energy, and developed seven additional landfill gas projects in five other states.

These projects capture the gas that is created by decomposition of trash in the landfill. Landfill gas contains about 50 percent methane. Methane has half the Btu value of natural gas and is a viable renewable energy source.

Our energy division is growing and our customers are demanding more green energy to meet their renewable portfolio standard requirements. We know that the quality and quantity of landfill gas is directly related to the organic content of the waste stream. We know we can effectively harvest this gas and use it to make energy. This is why we seek approval of Senate Bill 725 to increase renewable energy production from landfill gas here in Michigan. We can accomplish this with an exemption to the existing landfill yard waste ban by approving Senate Bill 725.

Tonia Olson, Director of Governmental and Community Relations

In 2007, Granger commissioned the report *Examining Increased Renewable Energy Production from Landfill Gas in Michigan*. The report was prepared by Public Sector Consultants.

In the report we asked if an exemption to the existing yard waste ban would increase renewable energy production from landfill gas in Michigan. Yard waste is defined as leaves, grass, and tree trimmings. It has the highest organic content of the non-landfilled waste stream. The findings of this study show that an exemption for yard waste **will yield more** energy production.



The report identified 50 municipal solid waste landfills in Michigan. Twenty have operational landfill gas projects, and at least 12 more could be developed. These active landfill gas projects supply more than 80 megawatts of energy. If all projects were fully developed and an exemption for yard waste allowed, the energy production from landfills could increase to about 300 megawatts which would energize 200,000 average sized homes (approximately the size of a medium-sized coal plant).

The key points of the legislation:

- This bill requests an exemption, NOT a repeal, of the existing yard waste ban.

- The intent is to provide meaningful energy results. Therefore, the language provides new and very specific criteria for the exemption to apply.
 - There must be an operable gas collection system in place before yard waste can be accepted
 - The language provides a move from no reported collection efficiency to a reasonable stretch of 70 percent
 - A productive end use of the power for electricity, direct use or as a substitute for conventional fuels is required

Why should you consider such a policy change? There have been important advances in landfill industry since the yard waste ban was adopted in 1995. These facilities are highly engineered and designed to serve the purpose of a safe repository for trash. While this is the intended purpose, we know these facilities can be a greater resource. Today, forward thinking companies like ours capture the methane to produce energy by installing collection piping as each portion of the landfill is built—before trash is put in place. The installation of the infrastructure for gas capture continues as the layers of trash are added.

I might also mention that landfill gas projects not only create renewable energy they create family sustaining jobs. From initial development through ongoing management and maintenance engineers, skilled trades and system operators are employed. Ancillary jobs include drivers and landfill operators who haul and handle the landfill gas generating trash.

The benefits of landfill gas projects are real. According to the Environmental Protection Agency (EPA), for every three megawatts generated, enough energy is produced to power 1,900 average-sized homes. The anticipated 300 megawatts to be gained from this change would mean power for nearly 200,000 homes. The addition of yard waste would act as an easily manageable catalyst to decomposition due to the high moisture content. This improves overall gas production and stability of the waste pile. Furthermore, landfill gas is considered base load power, available 24/7/365. Energy from landfill gas can continue to be harvested 20 to 30 years after the landfill closes.



Senate Bill 725 is consistent with State and Federal Policy:

The State Solid Waste Policy adopted in May of 2007 took the bold step of recognizing solid waste as a resource. Further, it specifically identifies energy recovery as a beneficial waste utilization technology. In this case, we're turning leaves and grass into electricity.

The EPA runs the Landfill Methane Outreach Program (LMOP). The mission of this office is to reduce methane emissions by lowering barriers and promoting the development of cost-effective and environmentally beneficial landfill gas projects. LMOP promotes landfill gas-to-energy projects to reduce local air pollution and create jobs, revenues, and cost savings. The EPA indicates that these projects destroy methane and other organic compounds in landfill gas and provide the benefit of offsetting use of nonrenewable resources, thus reducing air pollution emissions.

Yard waste for renewable energy production is seen as a high end use by the public. In March of 2008, we commissioned Lansing-based Denno Noor, LLC to conduct a brief survey. When those surveyed were asked if they would support allowing yard waste in landfills if it is used to increase the production of renewable energy, 86 percent responded favorably. When asked which resource they place a higher value on, compost or green energy, 60 percent placed a higher value on green energy.

Understandably, this requested policy change has resulted in a number of questions about various impacts. I would like to address the chief concerns.

1. How will increased yard waste volume impact available landfill capacity?

It is estimated that as a result of the decomposition process, yard waste loses half of its weight and 50 to 70 percent of its volume. Our engineers conducted a case study of our Wood Street Landfill facility to measure the impact on our remaining space. We found that our 60 plus years of capacity could be reduced by about four years. On the other hand, the landfill gas production would increase and be available for more than a century.

2. Will emissions increase from the addition of yard waste?

No. A collection efficiency of 70 percent does not necessarily mean 30 percent is emitted. An increase in collection efficiency as a condition for allowing yard waste disposal in a landfill will offset any increase in emissions. As collection efficiency increases, the proportion of gas collected increases and the proportion of gas emitted decreases. Other advanced management practices and oxidation of methane in soils also contributes to reduced emissions.



3. *Is this a significant source of green power?*

Certainly significance can be argued based on the comparison applied. To demonstrate the importance landfill gas projects can make, I would reference our partnership with the Lansing Board of Water and Light (LBWL). Our two Lansing area landfills transmit electricity to LBWL. In May, this electricity amounted to slightly more than 5 percent of their retail sales. To the LBWL this is significant.

4. *Can we have confidence in the measurement suggested for collection efficiency?*

The legislation requires use of LandGEM or a department approved method. The inputs of the model were calibrated to account for the actual field conditions of higher organic and moisture content of yard waste. LandGEM is an industry recognized project assessment tool. It is the model facilities are referred to for calculating emissions for the state and federal government, specifically the Michigan Air Emissions Reporting System (MAERS) and the Clean Air Act (CCA). Further, from a practical application, LandGEM is widely used as a development tool for evaluating project viability. It is not likely the commitment would be made to invest \$1.5 million per megawatt if the collection volume was not reliable.

The development and growth of landfill gas projects was born from great ingenuity, from the recognition that landfill gas can be harvested for an energy purpose not wasted. This legislation seeks to spur more such inventiveness. The language to allow for a landfill energy production facility is streamlined to promote development. It is responsible to environmental resource management by requiring all current landfill regulatory requirements to be met and provides accountability to the department for the expected result, but allows continued professional engineering cleverness as to how facilities get to the result.

Senate Bill 725 seeks to allow an exemption to the law that bans disposal of yard clippings in landfills that meet new and very specific criteria to achieve an energy production benefit. This would not require a community to landfill yard waste. It would not require a landfill to seek the exemption. Communities can elect to utilize yard waste for composting or mix yard waste with trash to create energy. Composting can and should exist; other technologies that can effectively and efficiently utilize yard clippings should exist too.

The question is how we should manage yard clippings. Senate Bill 725 provides answers for each community.



In our example, we are a landfill owner, gas developer and a compost facility operator. We recognize that the many communities we serve have different needs. We know that some customers believe in composting. We would like to provide this benefit on a smaller scale in a market-balanced environment that creates demand for the finished compost product. The highest product demand in our area is for green power for the LBWL. We know we can make renewable energy from yard waste and we would like to provide this benefit to our community.



As with any environmental issue there is a tendency for opinion based on emotion to influence the discussion. This evaluation based on technical findings supports moving forward with the idea that we can effectively recycle yard waste into energy. There is consensus that landfills should capture methane to produce energy when feasible and safe. There is also consensus that state-of-the-art technology can be used to capture the energy potential from yard waste. This is what Senate Bill 725 is proposing.

Approval of this bill recognizes the value yard waste can provide to responsibly meet our renewable portfolio requirements. The demand is for the light to turn on when we flip the switch using power that is not fossil-fuel based or from foreign sources. Approval, without question, will result in more renewable energy, decreased emissions, and a choice for management of yard waste as dirt or as power.

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