SWANA®
SOLID WASTE ASSOCIATION
of North America

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Silver Spring, MD 20910

March 19, 2007

Chairman John D. Dingell
Committee on Energy and Commerce
U.S. House of Representatives
Washington, DC 20515-6115

Re: Comments on Climate Change Policy
(Submitted via Electronic Mail)

Dear Chairman Dingell:

On behalf of the Solid Waste Association of North America (SWANA), I would like to thank you for your leadership in addressing climate change and providing us an opportunity to comment from the perspective of the solid waste profession. SWANA is a not-for-profit professional association with over 7,500 members from both the public and private sectors of the solid waste industry. Our mission is to advance the practice of environmentally and economically sound management of municipal solid waste (MSW) in North America. We believe that improved solid waste management practices can significantly reduce the emission of greenhouse gases (GHG) that contribute to global warming and climate change.

SWANA supports a comprehensive, integrated approach to solid waste management that incorporates a broad range of waste reduction, recycling and energy recovery activities to reduce waste disposal and recover value from municipal solid waste. Our members work in all aspects of solid waste management including recycling, composting, landfill management, landfill gas recovery and utilization, waste-to-energy, collection, transfer and transport of solid wastes.

SWANA believes that any national greenhouse gas (GHG) control program that the Congress develops should have the following characteristics:

- The program should recognize the significant GHG reductions that have occurred as a result of modern management of municipal solid waste.
- The program should take advantage of the even greater GHG reductions that can occur from more extensive energy recovery and recycling of municipal solid waste.
- The program should be market based, using the market and its forces to achieve the desired GHG reductions.

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- It should create financial incentives for energy recovery, recycling, and use of MSW to develop alternative fuels.
- If the program includes a cap and trade program, it should be multi-sector, transparent, rules-based and verifiable, and include GHG offsets for energy recovery and recycling.

Modern solid waste management systems have significant potential for reducing GHG emissions. To date there have been significant reductions in GHG emissions, in the order of 50% to 80%, as a result of these practices. Technical papers published in peer reviewed journals, U.S. EPA publications and industry reports[1,2,3,4] estimate that over the past 30 years, application of modern technologies in waste management have reduced GHG emissions by 120 to 190 million metric tons of carbon dioxide ($MMTCO_2E$) per year. Control and utilization of landfill gas has reduced emissions by 85 to 120 $MMTCO_2E$. Combustion and recovery of energy in waste-to energy (WTE) facilities have reduced emissions from 10 to 40 $MMTCO_2E$, and recycling and composting have reduced emissions by 8 to 36 $MMTCO_2E$.

This happened even as MSW disposal volumes in the U.S. grew from by over 100 million tons per year from 1970 to 2003. If the MSW industry had not changed or improved the technologies it used, net GHG emissions would have been in the range of 120 to 190 $MMTCO_2E$ higher today.

The GHG reductions from these different waste management techniques represent only what has been accomplished to date. With further incentives for these technologies that would occur with the waste industry participation in a carbon credit trading market, there is a potential for much greater GHG emission reductions in the future.

As you can see, there are a number of opportunities for cost-effective, environmentally sound control of GHG emissions through modern waste management practices incorporating:

- Recovery and Utilization of Landfill Gas
- Waste-to- Energy and Conversion Technologies
- Recycling and Composting

More detail on these practices is described below.

Recovery and Utilization of Landfill Gas. Landfill gas recovery and utilization provide valuable opportunities for GHG reduction. Landfill gas methane (which has a high global warming potential – 23 times that of CO_2) can be collected in high efficiency gas collection

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[1] Harrison, K.W., Dumas R.D., Solano, E, Barlaz, M.A., Brill E.D., & Ranjithan S.R., (2001) Decision Support Tool for Life-Cycle-Based Solid Waste Management, *Journal of Computing in Civil Engineering*, Jan.
[2]Thornloe, S., Weitz, K., Zannes, M. "The Impact of Municipal Solid Waste Management on Greenhouse Gas Emissions in the United States." *Journal of Air & Waste Management Association*, Volume 52, September 2002
[3]Weitz, K.A. (2005) Decision Support Tool Update to Current Conditions (2003), Research Triangle Institute
[4] U.S. EPA, (2006) *Solid Waste Management and Greenhouse Gases: A Life-Cycle Assessment of Emissions & Sinks*, 3rd Edition. October 2006

systems. The methane can then be destroyed by combusting the collected gas in flares, or using it as a fuel in engines or furnaces for energy recovery.

Landfill gas combusted in engine-generator sets can produce electricity. Alternatively the gas can be used directly as a fuel for heating or other industrial uses or can be further processed and used as a vehicle fuel. Currently, there are 423 operational landfill gas to energy projects in the U.S., which create 1,180 megawatts (MW) of electricity and 235 million metric standard cubic feet per day (MMSCFD) of renewable fuel. However, there are many more landfills in the U.S. that have the potential to capture and utilize landfill gas. EPA identifies 570 candidate landfills that have the potential for landfill gas to energy projects, representing 1,370 MW of energy or 695 MMSCFD of fuel.

The Energy Policy Act of 2005 identifies landfill gas as a renewable energy source and provides production tax credits under Section 45 of the IRS code for electricity produced from landfill gas. These tax credits for landfill gas recovery projects are very important to increasing and expanding landfill gas use, creating energy, and reducing GHG emissions. The Renewable Energy Business Alliance estimates that the Section 45 production tax credit in the Energy Policy Act of 2005 spurred approximately 50 new landfill gas energy projects, 250 MW of new capacity, and 1,498 new jobs.

Specifically, increasing the placed in service period and the payout period for the renewable Section 45 energy production tax credit is vital to having more landfill gas energy projects come online and produce electricity. In addition, raising the credit rate for landfill gas to the rate of the other renewable energies would allow landfill gas to be more competitive in the market, allowing even more projects to be financed and come online. Creating incentives for the direct use of landfill gas is also vital for boosting energy production from this clean, renewable resource.

If the Congress considers the enactment of a Renewable Portfolio Standard where generators of electricity would be required to produce a certain percentage of energy from renewable sources, landfill gas should be eligible for inclusion any renewable portfolio and should be tradable as a Renewable Energy Credit (REC).

Waste-to Energy and Conversion Technologies. Waste-to-energy refers to the controlled combustion of solid waste in modern furnaces with state-of-the art pollution controls. The energy can be recovered in the form of electricity or steam. WTE is classified as a renewable energy source according to the Environmental Protection Agency and under the Energy Policy Act of 2005. The waste that is combusted by waste-to-energy facilities is primarily biomass, a renewable resource.

Waste-to-energy also offers significant potential for reducing GHG emissions. WTE offsets landfill methane emissions by diverting wastes from landfills. It also creates a clean source of energy that offsets energy produced from the burning of fossil fuels. Currently, there are 89 waste-to-energy facilities in the United States, producing 2,700 MW of electricity. Waste-to-energy has a long history of being a reliable energy source in the U.S. and around the world.

Waste-to-energy is a clean form of renewable energy. Under the Clean Air Act, waste-to-energy facilities meet very stringent air emission requirements using advanced control technology. According to EPA in 2003, U.S. waste-to-energy plants have shown "dramatic decreases" in air emissions, and produce electricity "with less environmental impact than almost any other source of electricity." EPA also estimates that waste-to-energy prevents the release of 33 million metric tons of carbon dioxide annually.

Like landfill gas, waste-to-energy should be eligible for inclusion in any renewable portfolio standard, and it should be tradable as a REC. Furthermore, extending the placed in service and payout periods for production tax credits for renewable energy would also benefit waste-to-energy by encouraging the development of more facilities.

Conversion technologies such as hydrolysis, anaerobic digestion, gasification and plasma arc can convert solid wastes into industrial biochemicals and fuels. Use of conversion technologies would divert wastes from landfills and offset landfill methane emissions. They would also offset the carbon dioxide emissions from burning fossil fuels or producing industrial chemicals from virgin resources. Most of these conversion technologies are currently in the laboratory or pilot stage of development with very few commercial operations in North America. SWANA believes that the Congress should consider a federal program of research, development and demonstration of these technologies to help achieve higher levels of solid waste recovery and the associated reductions in GHG.

Recycling and Composting. Recycling can also play a key role in the GHG reductions that occur when recycled materials are used instead of virgin materials, saving energy. Reuse of recovered materials generally requires less energy than the use of virgin materials. For example, for every ton of recycled paperboard packaging produced, there is an overall net reduction of 3.6 metric tons of carbon dioxide emissions. In addition, the amount of energy that is wasted by not recycling paper, printed materials, glass, plastic, and aluminum and steel cans is equivalent to the output of 15 medium sized power plants. Recycling also diverts waste from landfills and offsets landfill methane emission in that manner.

In 2005, the U.S. Senate supported recycling by including the Recycling Investment Saves Energy (RISE) Act in the 2005 Energy Bill. This bill created financial incentives for recycling, which the Senate included as part of the National Energy Strategy. Financial incentives for recycling provide a great potential for increasing recycling rates and thus reducing GHG emissions. The financial incentive for recycling should be in the form of a tax credit or accelerated depreciation, and it should be able to be assigned through contracts by municipalities who do not pay taxes.

Composting also has a role in reducing GHG emissions. Like recycling and waste-to-energy, composting offsets methane release from landfills. In addition, by reducing water consumption in agriculture, composting reduces energy usage, and thus emissions. Financial incentives for composting, such as those needed for recycling, should be included in GHG reduction legislation. Finally, composting sequesters carbon and produces carbon dioxide naturally (biogenic).

Issues for Design of a GHG Credits Trading Program. SWANA proposes that any national credits trading program must be rule-based and transparent. The program must reconcile any existing cap-and-trade programs in the United States, whether they are on the State or local level, and it must create one uniform trading program. The program should be compatible with emission trading in international markets as well.

The GHG credits trading program should base credits on actual GHG emissions reductions. Landfill gas, waste-to-energy, recycling, composting, and carbon sequestration should all be eligible for offsets credits, and the credits should be valued equally with other technologies according to the level of emissions reductions. Landfill management as well as composting practices offer an additional environmental benefit of sequestering carbon and preventing its release. In addition to receiving credits for the other emissions reductions associated with these practices, landfill management and composting should also be eligible for additional credits due to carbon sequestration.

Projects should be eligible for both renewable energy credits (RECs) and offset credits, and any trading program should not interfere with RECs. If a federal renewable portfolio standard is established, RECs should be "unbundled" so that the RECs do not have to be sold to the power purchaser.

The potential for reducing GHG emissions through modern waste management practices presents a great opportunity for any GHG reduction program. Landfill gas and waste-to-energy are clean, renewable forms of energy that should be included in any carbon trading legislation, as a credit generating source, and in renewable portfolios. In addition, extending the tax credits and raising the credit rate for production of these renewable energies should be included in any GHG reduction legislation. Furthermore, financial incentives for recycling and composting, which can be used by both the public and private sectors, should be included in GHG reduction legislation.

SWANA appreciates this opportunity to provide input on Congress's national GHG emission reduction strategy. If there is any further information we can provide on this topic, please do not hesitate to contact us.

Again, thank you for your leadership on this very important issue.

Sincerely,

John H. Skinner

John Skinner, Ph.D.
Executive Director and CEO
SWANA