WHAT'S WRONG WITH TAX CREDITS FOR LANDFILL GAS ENERGY RECOVERY?

Tax credits for landfill gas energy recovery may seem at first to be a no-brainer. Why waste landfill methane when it can run turbines to generate electricity? We *should not* waste this methane, but capturing it must be required and not subsidized.

Let's look at the facts. (1) The vast majority of methane and other toxic gas generated by decomposing garbage is not captured by collection systems. Moreover, (2) current landfill technology and regulations are fatally flawed – lined landfills only delay, do not prevent, environmental contamination of both groundwater and air resources at most sites. The solution is simple: (3) methane production can be *avoided* with readily available, economically beneficial and environmentally valuable alternatives, like composting the organic fraction. Tax credits for landfills (4) undermine current organic recovery businesses and delay innovation of new, responsible alternatives to landfilling. In addition, (5) the proposed tax mechanism is inefficient, costly and misguided. The obvious conclusion from these facts is: (6) Landfill gas capture should be *required* (like liners and leachate collection), not subsidized.

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1. Most Landfill Gas Escapes Collection

Rotting garbage in a landfill produces gas. Methane, the most abundant gas produced, is one of the most potent greenhouse gases – 21 times more potent than carbon dioxide.

Most of the gas produced in landfills escapes to the atmosphere even at sites that install gas collection systems. Almost half of the *first* wave of gas generation occurs before collection systems are installed. And more than half of the total gas generated by landfills will occur in a *second* wave of gas generation decades in the future, long after the gas collection systems have been removed from service. Moreover, EPA rules mandating the installation of gas collection systems only cover 54% of the waste in the ground. Add up the numbers (50% x 54% x <50%) and a claim that much more than 10% of all the landfill gas actually gets captured is difficult to sustain.

Even more gas escapes at sites that optimize collection for electricity generation. If a landfill operator is offered a financial incentive to manage his site for power, he will shift the way he manages the site to pull more gas from the dense core at the expense of the periphery, or to use 'wet' (bioreactor) instead of 'dry' cells, either of which will significantly increase the proportion of gases emitted to the atmosphere.

Landfills' true contribution to global warming is likely to be far greater than the 4% of U.S. manmade greenhouse gases estimated by EPA when assuming, without any technical support, a 75% landfill gas capture efficiency. Astonishing though it sounds, landfills may actually contribute something closer to 20% of America's climate change gases when field data is finally gathered.

Landfill gases are not limited to methane. They also include known carcinogenic and lethal nerve gases that may lie behind health impacts that have been observed among people living in proximity to landfills.

2. Lined Landfills Postpone, Do Not Prevent, Pollution

Many of the constituents of garbage, including heavy metals and volatile organic compounds, are hazardous. Although statutes define household and commercial waste commonly placed in engineered landfills to be 'nonhazardous,' actual field data examined by the U.S. Environmental Protection Agency (EPA) has Anot reveal[ed] significant differences in the number of toxic constituents and their concentrations in the leachate@ from municipal and hazardous waste landfills.

Leachate, or 'garbage juice,' is formed when moisture contained in trash and water entering landfills through breaches in liners combines with organic material in the waste stream. Organics like paper, wood, yard trimmings and food scraps compose 62% of what

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gets landfilled. When these materials decompose without oxygen in a landfill, biological processes produce acids that dissolve substances out of the waste. Liquids containing hazardous material pool at the bottom of the landfill while gases rise to the top.

Hazardous leachate must be isolated from groundwater to protect the environment and public health. To do this, EPA's landfill regulations require composite liners of compacted clay and plastic sheeting on the bottom, sides and, after closure, top of the landfill to keep precipitation from entering and leachate from leaking out.

However, this approach is fatally flawed. EPA has acknowledged that these liners "will ultimately fail," and when they do, "leachate will migrate out of the facility." Liners may fail within decades, yet EPA recognizes that the duration that a landfill's hazardous loadings need to be isolated may be "many thousands of years," long after the time when discharges will occur.

3. The Real Issue is How to Prevent Uncontrolled Gas Production

The real issue is not whether to encourage energy recovery of the minor fraction of total landfill gas generation that landfill operators can actually capture. The far better question is how to prevent these dangerous gases from being produced in the first place.

Since it is the uncontrolled anaerobic decomposition of organic materials in landfills that produces methane and other toxic gases, the obvious answer is to implement resource management policies aimed at phasing out land disposal of organic matter. In fact, the European Commission has already begun phasing out land disposal of organics because organics mixed with garbage cannot safely be managed in the ground.

Composting is a proven bioconversion technology that transforms such things as grass clippings, paper towels, chipped wood and rotten vegetables with controlled, above ground operations. The composting industry has decades of experience in converting clean, source separated organic materials into a safe end product, using both aerobic and anaerobic (with and without oxygen) processes. Not only does composting prevent the vast majority of environmental impacts associated with landfills, composting also produces a valuable asset: soil amendment that helps restore fertility to our gardens, parks, farms and forests. As a form of recycling, composting is recognized as higher than wasting in EPA's materials management hierarchy.

Other in-vessel bioconversion technologies show promise of creating products in urban areas from clean, separated organic materials. Tax subsidies for landfill gas recovery will stifle innovation and investment in developing new bioconversion technologies based on clean organic feedstocks – *by using subsidies for polluting alternatives to make environmentally preferable options appear less competitive in the marketplace.*

4. Subsidizing Waste Disposal Undermines and Delays the Solution

If IRS Section 45 landfill gas tax credits are enacted to replace the Section 29 credits that expired two years ago, a $2 or more per ton subsidy will be created. Related benefits could increase that to almost $5 per ton in states with requirements that their electric utilities maintain a power portfolio that includes 'green' or renewable power sources inappropriately defined to include landfill gas.

The cumulative weight of all subsidies for wasting, when added to the 'subsidy' of externalizing the full cost of environmental impacts, has made the price of landfilling appear to be a fraction of its true cost. That makes it difficult for composting to compete in the marketplace, even though composting avoids the environmental problems created by landfilling organics. Innovation and investment in developing new bioconversion technologies based on clean organic feedstocks is also stifled.

5. Landfill Tax Credits are Inefficient, Costly and Misguided

Energy recovery systems for landfill gas are already financially viable in several states with higher electricity costs because the price paid to independent power producers is sufficient to recover the costs of the systems, including a fair return on the investment. This creates a tax structure in which there is a tendency for most of the lost revenues to go to taxpayers who would have taken the desired action anyway even if the credit did not exist.

We estimate that just the landfill gas provision of the biomass section could cost $250 million. This is an exceedingly large amount of revenue to lose in such a tight budget when the credit will do little to achieve its intended purpose, and much to preclude the real solution.

6. Mandate Energy Recovery Instead of Tax Credits

We do not offer tax subsidies in lieu of regulations to insure that liners and leachate removal systems are installed in landfills. We should require rather than subsidize energy recovery as well.