Reprinted from
RESOURCE RECYCLING

By Ananda Lee Tan, Gary Liss and Matt Leonard

# BURNING RECYCLING

**Community recycling efforts around the country are getting burned by incineration. Despite financial numbers that don't add up, why is incineration of solid waste – and recoverable materials – for energy recovery on the rise? What policies and incentives need to change to turn down the heat?**

Progressive policies in the U.S. have emerged over the past decade to address climate change and the need for domestic energy resources. But some of these efforts are in opposition to what most would consider environmentally friendly. The incineration industry is trying to rebrand itself as "green" and "renewable" to count the burning of municipal solid waste (through incineration and similar thermal conversion technologies) as renewable energy. This growing trend undermines the efforts of communities and businesses seeking to expand local recycling and recovery efforts that could generate 10 to 20 times the number of jobs than wasting in incinerators and landfills.

Ironically, the many renewable energy subsidies are why incineration facilities are still being considered in many locations despite being plagued with widespread public opposition, high true costs and the success of more efficient, competing practices such as reuse, recycling and composting. The incineration industry has worked strategically to paint incineration in both popular political rhetoric and legal definitions as "renewable energy." In addition to shifting the economics by qualifying such projects for myriad renewable energy subsidies, proponents recognize that if incineration can gain wide acceptance politically, the regulatory hurdles and permitting processes that follow may become easier for the industry at every level.

Recent research shows that heavy investment in incineration in Europe has undermined the growth of waste prevention, reuse and recycling, with waste being transported long distances to feed incinerators that were built too large for their local needs. Similarly, subsidies and other policy and permitting incentives for municipal solid waste incinerators in the U.S. have resulted in costly burdens for taxpayers and ratepayers.

## Money to burn

Municipal solid waste incinerators are the most expensive form of energy generation in the U.S. (see Table 1). The capital costs are double those of coal power plants and over 60 percent higher than nuclear.

Also, reports have shown that waste incinerator operations and maintenance costs are 10 times greater than coal and four times greater than nuclear. Often costing upwards of half a billion dollars to build, many incinerators have also required hundreds of millions of additional spending on upgrades for the latest pollution control technologies, and hundreds of millions more in debt service payments. Since waste management is mostly the responsibility of local government, all these costs are eventually borne by the public.

**Table 1 | Capital cost estimates for electricity generation plants for selected technologies**

| Technology/fuel | Nominal facility capacity (kW) | Capital cost ($/kW) | Fixed O&M ($/kW-yr) | Variable O&M ($/MWh) |
|---|---|---|---|---|
| Advanced pulverized coal | 650,000 | 3,167 | 35.97 | 4.25 |
| Advanced nuclear/uranium | 2,236,000 | 5,339 | 88.75 | 2.04 |
| Waste incineration | 50,000 | 8,232 | 373.76 | 8.33 |
| Photovoltaic/solar | 150,000 | 4,755 | 16.70 | 0 |
| On-shore wind | 100,000 | 2,438 | 28.07 | 0 |

Source: U.S. Energy Information Administration (Department of Energy), Updated Capital Cost Estimates for Electricity Generation Plants, 2010.

In October 2011, the city of Harrisburg, Pennsylvania voted to file for bankruptcy due to its remaining incinerator-related debt of over $300 million. Harrisburg's annual incinerator debt payments were $68 million, larger than the city's entire operating budget.

## Burning over recovering

In its report, "Burning Public Money for Dirty Energy," the Global Alliance for Incinerator Alternatives (GAIA) [Editor's note: the authors of this article are affiliated with GAIA] found much supporting evidence that having municipal solid waste incinerators count as "renewable energy" subsidizes an expensive industry with public funds and provides a competitive advantage over other approaches to managing discarded resources. Other findings include:

Most federal energy subsidies that benefit incineration are actually meant to support the development of real renewable energy sources such as wind, solar and micro-hydro, which should not have to compete against dirty energy for the same funding.

Although incineration projects have only obtained a portion of the renewable energy subsidies available, these policies set a precedent for increased financial support for the incineration industry.

Renewable energy and climate change policies are moving forward much faster at the state level. The State Renewable Portfolio Standards are becoming powerful drivers for the expansion of the incineration industry, in addition to opening the door for a range of state and federal subsidies and permitting assistance.

Many states are leading the way to subsidize incineration with ambitious and comprehensive climate and energy regulations. A number of states (California, Hawaii, Indiana, Virginia, Maryland and others) have already included benefits for incineration in their energy policies. Incineration in energy policies provides significant advantages for accessing public financing and other forms of assistance.

## Handouts on fire

With the failure of federal climate legislation in 2009, and the absence of a federal renewable electricity standard, state renewable portfolio standards are now the governing regulatory programs that mandate the production of "renewable energy." Taxpayer and ratepayer subsidies make it possible for the mandates to be fulfilled by providing the funding to build and operate new renewable energy generating sources.

The RPS is one of the biggest drivers of alternative energy. Compliance with these standards takes various forms, but, in general, they are legal requirements that a certain percentage of electricity produced in a state be from "renewable" sources. State programs define qualifying technologies differently, or in varying classes. Qualifying facilities are authorized to sell electricity and "renewable energy credits" (RECs), with each qualifying facility being awarded one REC per megawatt hour (MWh) of power produced each year.

The average value of a REC in 2010 in Massachusetts was between $20 and $40 per MWh and the average monthly price for electricity in ISO New England, the regional power transmission system, from March 2003 to February 2010 was $62 per MWh. At this rate, a large 90 megawatt incineration incinerator can earn about $23 million per year by selling the credits.

As of July 2010, 29 states (and Washington D.C.) have a mandated RPS, and seven more have "goals," which are currently voluntary but may become legally binding in the future (See Table 2 for details).

There is a Federal Renewable Fuel Standard (RFS), and some incineration qualifies under those standards. There are also other state grants, loans and incentives for biomass incinerators, where waste incineration is often included in the state RPS definitions of biomass.

## Conclusion

Investing taxpayer money in a regressive industry such as incineration means that, as a country, we are holding up a lose-lose-lose outcome for energy, the climate and the economy. As a country still in the midst of an economic downturn with over 14 million people unemployed, it in unconscionable to waste taxpayer dollars on a technology that represents both the most expensive electricity generation and waste management option, and pass over reuse, recycling and composting options that have stronger growth potential.

The incinerator industry's greenwashing of its sparse energy potential conceals the reality that incineration depends on continued levels of natural resource depletion to feed a throwaway economy. Wasting undermines such practices such as reuse, recycling and composting, which close the loop on materials efficiency and conserve energy spent on resource extraction and processing. New EPA analysis shows that the lifecycle of goods and products – extraction, production and disposal – contributes to 42 percent of U.S. greenhouse gas emissions.

## Table 2 | State RPS Overview

| STATE | RPS Targets | MSW qualifies? | Anaerobic Digestion qualifies? | Landfill Gas qualifies? | Biomass qualifies? |
|---|---|---|---|---|---|
| Arizona | 15% by 2025 | No | Yes | Yes | Yes |
| California | 33% by 2020 | Yes | Yes | Yes | Yes |
| Colorado | 30% by 2020, 10% for co-ops and large munis | No | Yes | Yes | Yes |
| Connecticut | 23% by 2020 | Yes | Yes | Yes | Yes |
| Delaware | 20% by 2020 | No | Yes | Yes | Yes |
| District of Columbia | 20% by 2020 | Yes | Yes | Yes | Yes |
| Hawaii | 40% by 2030 | Yes | Yes | Yes | Yes |
| Illinois | 25% by 2025 | No | Yes | No | Yes |
| Iowa | 105 MW | Yes | Yes | No | Yes |
| Kansas | 20% by 2020 | No | Yes | Yes | Yes |
| Maine | 30% by 2000, new 10% by 2017 | Yes | No | Yes | Yes |
| Massachusetts | 22% by 2020, new 15% by 2020, increases 1% / year | No | Yes | Yes | Yes |
| Maryland | 20% by 2022 | Yes | Yes | Yes | Yes |
| Michigan | 10% + 1100MW by 2015 | Yes | Yes | Yes | Yes |
| Minnesota | 25% by 2025 | Yes | Yes | Yes | Yes |
| Missouri | 15% by 2021 | Yes | Yes | Yes | Yes |
| Montana | 15% by 2015 | No | Yes | Yes | Yes |
| Nevada | 25% by 2025 | Yes | Yes | Yes | Yes |
| New Hampshire | 23.8% by 2025 | Yes | Yes | Yes | Yes |
| New Mexico | 20 % by 2020, 10% by 2020 for co-ops | No | Yes | Yes | Yes |
| New Jersey | 22.5% by 2021 | Case by case | Yes | Yes | Yes |
| New York | 29% by 2015 | No | Yes | Yes | Yes |
| North Carolina | 12.5% by 2021, 10% by 2018 co-ops and munis | Case by case | Yes | Yes | Yes |
| Ohio | 25% by 2025 | Yes | Yes | Yes | Yes |
| Oregon | 25% by 2025, 5-10% for smaller utilities | Yes | Yes | Yes | Yes |
| Pennsylvania | 18% by 2021 | Yes | Yes | Yes | Yes |
| Rhode Island | 16% by 2020 | No | No | No | Yes |
| Texas | 5880 MW by 2015 | No | Yes | Yes | Yes |
| Washington | 15% by 2020 | No | No | No | Yes |
| Wisconsin | 10% by 2015 | Yes | Yes | Yes | Yes |

Source: Global Alliance for Incinerator Alternatives, 2011.

Reuse, recycling and composting are critical ways to lighten the ecological footprint of industrial society, while enhancing natural and agricultural resources. ♻

Ananda Lee Tan is U.S./Canada coordinator of the Global Alliance for Incinerator Alternatives and can be reached at ananda@no-burn.org. Gary Liss is president of Gary Liss & Associates, and a boardmember of the GrassRoots Recycling Network and can be reached at gary@garyliss.com. Matt Leonard is a climate and energy consultant and can be reached at mattjosephleonard@gmail.com.

GAIA encourages all who support zero waste practices reuse, recycling, composting to become active in its network to fight incinerator subsidies: www.no-burn.org. The GAIA report Burning Public Money for Dirty Energy can be downloaded at: http://tinyurl.com/GAIA-BurnReport. A complete, unedited version of this article can be accessed at: http://tinyurl.com/GAIA-Article.

*Reprinted with permission from* Resource Recycling, *P.O. Box 42270, Portland, OR 97242-0270; (503) 233-1305, (503) 233-1356 (fax); www.resource-recycling.com.*