GLOBAL ALLIANCE FOR INCINERATOR ALTERNATIVES

COMMUNITY TOOLS FOR ANTI-INCINERATION ORGANIZING
Introduction

This toolkit is designed to help members and allies of communities burdened by toxic incinerators organize against waste-to-energy (WTE) incineration. It is informed by the experiences of GAIA members around the world who have mobilized their own communities and allies to fight for a world without waste-burning.

Each of these fights is unique, and each is difficult—but possible to win. Some WTE facilities are operated by multi-billion dollar companies, while others are operated by a municipality. Most incinerators were built to take in more waste than a municipality can provide. So, while every facility burns some local waste, the majority of material is generally imported from around the state or broader region. Whatever the details, your campaign will require an approach tailored to your community’s own needs and capacities.

You will not need to start alone. This toolkit will help you identify which type of incinerator plagues your community, gather hard-to-find data about it, and develop strategies to shut it down. Case studies from GAIA members with extensive experience will offer you ideas and encouragement, or even a blueprint for your own fight.
A brief history of incineration in the U.S.

The first U.S. incinerator was built in 1885 on Governors Island in New York, NY. By the mid-20th century, hundreds of incinerators were in operation in the United States. However, little was known about the environmental impacts of the water discharges and air emissions from these incinerators until the 1960s. When the Clean Air Act (CAA) was enacted in 1970, existing incineration facilities became subject to new standards that banned the uncontrolled burning of municipal solid waste (MSW) and placed restrictions on particulate emissions. Environmental justice activists then targeted facilities that violated this new regulation, and many communities successfully forced such incinerators to close.

Incineration of MSW increased in the 1980s, with more than 15% of all U.S. MSW being combusted by the early 1990s. The majority of non-hazardous waste incinerators were recovering energy by this time and had installed pollution control equipment, which reduced emissions but still presented harm to human health. With the newly recognized threats posed by mercury and dioxin emissions, the EPA introduced additional controls that required most existing facilities be retrofitted with air pollution control systems, or shut down. Since 2000, 31 incinerators shut down, primarily due to economic losses, and the overall trajectory of this industry is in decline.

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Despite promises from the industry, the energy recovered from WTE is negligible, representing less than 0.3% of all energy on the electric grid.\[4\] According to GAIA’s Failing Incinerators Project, incinerating waste is one of the most toxic, expensive, dangerous, and climate-polluting ways to generate energy. It perpetuates environmental racism, with approximately 8 out of 10 incinerators in the U.S. located in environmental justice communities, where the majority of residents are BIPOC, low-income, or both. Incinerators are also major contributors to climate change, emitting 68% more greenhouse gases per unit of energy than coal plants, and nearly one ton of CO2 emissions for every metric ton of plastic burned.\[5\]

U.S. Municipal Solid Waste Incinerators: An Industry in Decline (Chapter 1: History of the Incineration Industry)

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What is an incinerator?

Incineration burns discarded materials—including paper, plastics, metals, and food scraps, all of which could be collected for reuse, recycling, or compost—into toxic bottom ash, fly ash, combustion gases, air pollutants, greenhouse gases, wastewater, wastewater treatment sludge, and heat. It is important to note that burning waste does not make it disappear. Rather, it enables unsustainable consumption of resources, contributes to climate change, releases outputs that pose hazards to public health, and diverts funds from cheaper, sustainable zero-waste solutions.

As of December 2020, there are 73 MSW “waste-to-energy” incinerators operating in the U.S.,[6] in addition to incinerators that burn medical waste, biomass, hazardous waste, as well as cement kilns and industrial boilers that burn waste. Other forms of incineration include pyrolysis, gasification, and other so-called “chemical recycling” and plastic-to-fuel units that use waste feedstocks/fuels for the same fundamental thermochemical processes as conventional incinerators, as discussed below. Incineration is one of the most expensive forms of energy generation—up to double the cost of solar and three times the cost of wind. These facilities rely on high volumes of waste to operate the furnaces in order to remain profitable, impeding efforts to reduce waste and create more green jobs through zero-waste policies and programs.[7]

Despite being an inefficient, polluting method of energy generation, WTE is defined under some federal and state guidelines as a form of renewable energy.[8]

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8 New Jersey’s Dirty Secret: The Injustice of Incinerators and Trash Energy in New Jersey’s Frontline Communities. Earthjustice, the Vermont Law School Environmental Advocacy Clinic, Ironbound
How does a MSW incinerator function?

The primary purpose of burning waste is to reduce the volume of waste to be landfilled, but the process creates toxic ash that still requires landfilling. At most MSW incinerators, waste is unloaded from collection trucks and placed in trash storage bunkers. An overhead crane sorts the waste and then lifts it into a combustion chamber to be burned. Heating and burning waste causes dioxins to form and releases heavy metals and many other hazardous emissions. Some of these emissions are collected into ash (see Hazardous Ash section), and some go out the smoke stack. The heat released from burning also converts water to steam, which is then sent to a turbine generator to produce electricity, albeit inefficiently. The remaining ash residue is collected and loaded onto trucks to be transported to a landfill or an ashfill (a landfill that only accepts ash residue).

Incinerators often source their waste from intermediary points called waste transfer stations, which are usually in low income communities and communities of color in the incinerator’s “wasteshed,” and can be connected by truck, rail, or barge. The transportation process is just one of the points of pollution, often from vehicles using outdated technology that fails to meet basic emissions standards.

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11 A wasteshed describes the geographical area sending waste to an incinerator or other destination.


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HEALTH IMPACTS

MSW incinerators are significant emitters of toxic air pollutants that are detrimental to human health, including heavy metals, dioxins, lead, mercury, nitrogen oxides (NOx), and fine and coarse particulate matter (PM).[13] People living close to these facilities are exposed to these toxins through inhalation and contaminated food and water. The health impacts of this exposure include asthma and other respiratory disease, heart disease, miscarriage, stillbirth, kidney disease, high blood pressure, and psychological and neurological issues.[14] Notably, long-term exposure to PM has been shown to increase the risk of death from Covid-19.[15] Shutting down incinerators is therefore part of a just and equitable pandemic recovery.


REFUSE-DERIVED FUEL

Refuse-derived fuel (RDF) systems also burn waste, after a minimal first step of mechanically shredding incoming MSW, which separates out some non-combustible materials. As with other types of incineration, waste is burned in a dedicated furnace, or as a supplemental fuel in a conventional boiler system or cement kiln. RDF is produced from a mixture of MSW, including organic, textile, plastic, wood, and paper waste. These materials must be separated from non-combustible materials such as glass and metals, while the combustible material is broken down into smaller pieces. This is a time-consuming and energy-intensive process that prevents materials from going to more sustainable forms of source separation, producing the same types of harmful pollution as conventional incinerators.

PYROLYSIS, GASIFICATION, AND PLASMA INCINERATION

Pyrolysis, gasification, and plasma technologies heat waste materials to high temperatures, creating gas, solid, and liquid residues. Depending on the desired output, the byproducts are either combusted as fuels, releasing hazardous pollutants, or refined to produce other materials. These technologies are regulated as incineration by the European Union and in some cases by the U.S. EPA, but in the U.S., the fossil fuel industry falsely promotes them as “circular” solutions for recycling of plastics, medical waste, municipal waste, hazardous wastes, and other waste feedstocks. If allowed to continue expanding without stringent federal regulation, these technologies could reverse decades of progress toward pollution and waste prevention. In many U.S. state legislatures, the fossil fuel industry and plastic producers have also been pushing for what they call “chemical” or “advanced” recycling, which the industry claims can turn recovered plastics into new plastic materials. However, these technologies are unproven and distract from solving plastic overproduction and pollution crises. Several states, including Rhode Island and Oregon, prohibit the construction of new facilities that incinerate waste.

CEMENT KILNS

Although cement kilns are not designed to burn waste, municipal and industrial waste is sometimes added as a fuel, called co-incineration. This waste is usually processed into refuse-derived fuel. A 2013 EPA loophole made it easier to burn waste in cement kilns, coal plants, and biomass boilers by redefining some waste as “material.” This designation, which is nothing more

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than a name change, allows waste to be burned in facilities that are not required to meet emissions regulations designed specifically for waste incineration, including limits on carcinogens like heavy metals, dioxins, and other hazardous air pollutants. [19]

HAZARDOUS ASH

While advanced air pollution control equipment removes some of the toxic pollutants from incinerator exhaust, it concentrates them in other byproducts, such as toxic ash and wastewater. Approximately 26-40% of waste becomes bottom ash, the residue that drops below the furnace as the waste burns. Pollutants removed by pollution control systems become fly ash, so the systems that remove the most pollutants also create the most toxic fly ash. Incineration also generates new toxic chemicals such as dioxins and furans, which can leach into soil and groundwater and accumulate in food chains.

To minimize their toxic effects, this ash requires special treatment and separate disposal, but some is instead sent to landfills untreated. The ash spreads via wind and air, impacting surrounding communities. Some ash is mixed into concrete, buried in salt mines, mixed into asphalt for roads, or mislabeled as fertilizer and spread on agricultural lands, where it can leach into soil and further contaminate ecosystems and the food chain. [20]

THE ECONOMICS OF INCINERATION

Incineration’s devastating toll on human health is both unjust and expensive. For example, the Wheelabrator incinerator in Baltimore, MD was estimated to cost the city $55 million each year in emergency hospital visits, medical treatments, and lost work days due to the surrounding community’s health problems. [21]

In addition to paying more for healthcare due to a higher pollution burden, residents may also pay more to have waste burned instead of landfilled. In New York, the amount that incinerator operators charge municipalities to incinerate one ton of waste, called a “tip fee,” averages $76.82/ton, compared to an average of $66.17/ton for landfilling waste. [22] The U.S. Energy Information


Administration reports that burning trash in MSW incinerators is the most expensive way to make energy. Both incineration and landfilling are more expensive than zero-waste solutions: pressuring polluting industries to reduce the amount of waste they produce, introducing reusable products, composting, localizing waste processing, and recycling.

Troublingly, in many states, burning MSW is considered a renewable energy source. For example, the Florida Renewable Portfolio Standard (RPS) gives incinerators access to renewable energy subsidies, funded by taxpayer dollars, that contribute to the profitability of waste-to-energy. Despite the serious environmental and health risks associated with burning trash, renewable energy subsidies in some states effectively promote incineration as an “environmentally-sound” way to manage waste.\(^{22}\)

The contracts that municipalities sign with incineration companies pose serious challenges to anti-incineration organizers. They are often long-term (up to 30 years), locking communities into decades of air pollution and carbon emissions. They also typically demand delivery of a minimum amount of trash (called a put-or-pay contract), with the threat of a financial penalty for the municipality if the requirement is not met. This means that if municipalities divert waste into reusables, composting, and other zero-waste solutions, they risk lawsuits from the incineration industry that can plunge them into debt and threaten their fiscal stability.

23  “The Cost of Burning Trash”  The Tishman Environment and Design Center at The New School
https://static1.squarespace.com/static/5d14dab43967cc000179f3d2/t/5fc686311972c46e3c8167d1/1606846003793/The+Cost+of+Burning+Trash+-+All+5+states.pdf

BLARG members celebrate the completion of a successful visual waste audit.
**Covanta’s incinerator in Honolulu, HI:** An example of a put-or-pay contract’s sustainability consequences: According to a 2021 EPA report, the 20-year ‘put-or-pay’ contract in Honolulu requires the City and County of Honolulu’s Department of Environmental Services to provide 800,000 tons of MSW annually to the WTE contractor or pay a penalty for any lost revenue from energy sales. From 2013 to 2016, the city had to pay a WTE facility contractor over $6.2 million in penalties for not supplying enough waste. Honolulu discontinued public school recycling programs to shift recyclable materials to the WTE facility.\(^{24}\)
Case Study

THE BROOKHAVEN LANDFILL ACTION & REMEDIATION GROUP (BLARG)

Started by a group of activists from Suffolk County on Long Island, New York, the Brookhaven Action & Remediation Group (BLARG) emerged during the Black Lives Matter protests in the spring of 2020. The activists identified the Brookhaven Landfill as an issue of systemic racism, public health, and a threat to the future of the surrounding community. Initially, BLARG sought more community involvement in the Town of Brookhaven’s promised 2024 closure of the landfill. But the group discovered that the town actually planned to expand the landfill instead of closing it. BLARG reoriented their campaign, rallying residents around the slogan “Closed Means Closed!” The campaign has grown into a regional movement advocating for the closure and remediation of the Brookhaven Landfill, while simultaneously calling for regional accountability and partnership in supporting a just transition away from incineration and landfilling.
Long Island has four incinerators, located in Hempstead, Babylon, Huntington, and Islip, all run by Covanta, the world’s largest incinerator operator. Between them, they received over 1.7 million tons of municipal solid waste in 2019. The fly ash from these facilities is then trucked away to be landfilled, with over 351,000 tons of fly ash going into the Brookhaven landfill. The 2,000 residents of the Brookhaven community are amongst Suffolk County’s most racially and ethnically diverse and, according to the Centers for Disease Control (CDC), have the lowest life expectancy on Long Island.

BLARG has used many tactics in their campaign: protests, social media campaigns, action hours with emails and phone calls to town officials, mobilizing for town halls, sign on letters, petitions, news/radio interviews, lawn signs, postcard campaigns, and collaborations with other local organizations. BLARG also hosts weekly Zoom meetings where members can voice their concerns, organize, and plan for future events. BLARG meetings frequently feature guest speakers, including local politicians, waste haulers, residents from other landfill communities, the New York Department of Conservation, and even representatives from Covanta.

After local officials complained that BLARG wasn’t providing solutions, the group created a one-month composting pilot that diverted about 1,200 lbs of food waste from incinerators, which also kept what would have been the resulting fly ash out of the landfill. The group also started a waste audit initiative to collect information crucial to holding the township accountable for the area’s waste crisis.

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Key questions to ask about your incinerator

- Who owns and operates the incinerator? Is it a private company, city, county, joint ownership by several governments through a local agency or authority, or a combination of public and private? If a private company is involved, where are they based?
- Which cities or counties have contracts to send waste to the incinerator?
- How long do these contracts with the company and municipality last?
- What is the company’s track record with labor, health, safety, finances, and the environment?
- Can you find any news coverage about any type of problems at the incinerator?
- Where does the incinerator ash go?
- Can you find any specific landfills or other destinations?
- How much and what types of MSW is being processed at the facility, and where does the byproduct (fly ash) go?
- What emissions are being reported? To find older records of this information, you can search the EPA ECHO database. To find more recent information, please look for your state air pollution enforcement agency.
- To learn more about operating permits and the permitting process, please refer to this source.
- Incinerators are required to have an air permit (called a Title V air permit), which needs to be renewed every five years. Some incinerators have been allowed to continue operating without renewing their Title V permit. If your incinerator’s Title V air permit is active, when does the permit need to be renewed? If the incinerator is operating without a renewed permit, when did the last five year period end?
- Can you find any history about the incinerator being proposed and built, especially as who spoke out against it, and who supported it?
- Who buys the electricity from the incinerator? Can you find any public agencies that have energy purchase agreements with the incinerator?
- You may find information by asking the local government.

For more key questions, please check out GAIA’s questions to ask about your incinerator. To get the answers to many of these questions, you will probably need to contact your municipality’s waste or public works agency. Some state air pollution enforcement agencies provide more recent emissions and permitting information online. Try calling this agency to ask for all information about your incinerator’s permit and emissions records.

If you are still struggling to get answers, you may need to file a Freedom of Information Act (FOIA request for government records related to your toxic facilities. A guide to doing so can be found here.
Organizing your community

1. Talk with others to build a leadership team
   Create a list of community members you can work with to collectively lead your campaign. Meet with each, then collectively decide who will fit best together as a team. Be sure to center the voices of those most impacted by the facility(ies) in question.

2. Clarify issues and solutions
   Identify local polluting facilities and draft a plan to address them. Your goal could be shutting the facility down, ending the contracts, ending purchasing agreements, making the incinerator more expensive to operate through several mechanisms. Invite other community members, hold community meetings, and engage with neighbors and businesses to identify a shared concern to rally behind. Discuss possible ways to remedy the issue and draft a plan of action.

3. Develop your strategy
   Set timelines, identify stakeholders, evaluate the context of your community and waste management plan, and set benchmarks that will help you determine which parts of your campaign are working, and which aren’t. Working through strategy and mapping exercises together builds alignment within your organizing team, such as these target selection and strategy worksheets from Midwest Academy and this power mapping toolkit.

4. Implement and evaluate
   Coordinate with your community to create your timeline, delegate tasks, and maintain communication. Afterwards, reflect on the results of your plan and discuss with your community how to proceed.

For further organizing guidance, we recommend the NAACP Environmental & Climate Justice Coal Blooded Action Toolkit and GAIA’s Zero Waste Masterplan Companion Guide for Organizers.
Case Study

BREATHE FREE DETROIT

Construction of the Detroit incinerator began in 1986, despite significant opposition from local environmental organizations and residents. Over the next 33 years, residents, community organizations, and environmental justice advocates undertook various campaigns to shut the incinerator down. In 2018 Breathe Free Detroit, and its campaign partners, prepared a 16-page report, which covered: the incinerator’s construction and design; its services including solid waste disposal, electricity generation, and steam sales; air quality impacts; demographic makeup of the neighborhood around the facility; and common health effects caused by incineration. The report delineated over 800 emissions violations in less than five years and on-going odor violations. It made the case for how the incinerator and its operations were an example of environmental racism.

Activists carrying sunflower protest signs inspired by artists of the U.S. Social Forum, who created the signs at The Yes Farm in Detroit, MI. Source: https://www.no-burn.org/breathe-free-detroit/
A one-page fact sheet highlighting the report’s findings proved invaluable as a community resource, providing easily-referenced data on health impacts, facts demonstrating the incinerator as an example of environmental racism, and clear actions to take. Suggested actions included calling the Michigan Department of Environmental Quality (MDEQ) to report odors, writing postcards to city officials, and signing a petition calling for the facility to be shut down. Calls to MDEQ resulted in multiple violations against the incinerator. The nearly 15,000 signatures on the petition were printed out and delivered, along with the report, to the mayor’s office after a press event in front of city hall. This event generated press coverage and led to a meeting with officials.

To further build momentum, organizers identified sites that were familiar to communities and strategically circled the incinerator. Each month, they held a meeting at a different site, which they promoted through flyers posted in the area. This built a localized network that grew with each meeting connecting community members living near different sites.

Ultimately, the Ecology Center, Environment Michigan and local community members, represented by lawyers from Great Lakes Environmental Law Center, and National Environmental Law Center issued a notice of intent to sue the incinerator’s owners for ongoing and repeated violations of the Clean Air Act through the rights of a citizen lawsuit. The lawsuit sought a court order requiring the incinerator to comply with its Clean Air Act permit, and civil penalties to punish them for past violations and to deter future violations.

Five days before the lawsuit was scheduled to move forward, the incinerator’s operators announced they were closing the facility because they could not afford to correct the pollution control issues.

Advocates then shifted to pushing the city for a just transition away from incineration: jobs for the incinerator workers, the expansion of zero-waste solutions to the city’s waste stream, and efforts to strengthen communities near the now closed incinerator who face incoming new development. Please reference the Rooted We Rise Guide. This work is still ongoing.
Conclusion

Fighting incineration is a long and often difficult process. It is also a worthwhile one whether or not it closes a particular facility, because it strengthens communities and builds their long-term power. Transitioning to a zero-waste world can only happen under the leadership of people most harmed by environmental injustice, and communities impacted by incinerators are a crucial part of that group. By joining this fight, you are making an invaluable contribution to a more just future.

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Cover image: Ironbound Community Corporation, youth action for GAIA Global Day of Action 2013. Credit: Molly Greenberg, ICC