



#breakfreefromplastic



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TOWARD A JUST, TOXIC-FREE WORLD

Factsheet on Plastics, Waste-to-Energy Incineration, and Zero Waste



Plastic waste dumped in Malaysia. Photo by MAGESWARI SANGARALINGAM

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A report published by the Center for International Environmental Law in September 2017 revealed that 99% of plastics are produced from chemicals sourced from fossil fuels. Further, researchers say that based on current projections, we will have produced 26 billion tons of plastic waste by 2050¹.

Today, the world is already drowning in plastic waste, and countries—even the developed ones—have not been able to cope. For the longest time, wealthy countries have been exporting plastics to China. However, in 2018, China shut its doors to low-grade plastic waste imports to protect its borders. The move threw the global plastic recycling industry into chaos—exposing the loopholes of recycling.

WASTE TRADE IN ASIA

Communities on the Frontlines of the Global Plastic Crisis²

Following the China ban, plastic waste—and the environmental and health problems it causes—was diverted to other shores, stressing infrastructure and amplifying the problems of plastic pollution in lower income countries awash in the trash of wealthy nations.

Malaysia took in more imported waste than any other nation. Thailand had the largest percentage increase in plastic waste imports than any country in the world at over 1,000%. Indonesia's imports increased at the end of 2018 as Malaysia and Thailand began imposing their own restrictions. This illegal transboundary dumping of plastic waste, mostly from countries previously seen as good recyclers, underlines one crucial truth: **recycling is not enough**.

Richer countries now know that the waste they throw in their recycling bins are not always recycled and often end up in less developed nations.

Meanwhile, burdened by the high influx of plastic waste, developing countries are calling for bans on waste dumping. Most recently, the Malaysian government shipped back waste to Spain, the Philippines sent back waste to Australia and Hong Kong, and Indonesia has re-exported illegal waste back to the US.

But the suffering of affected communities and individuals is far from over. Southeast Asian countries continue to be the rich nations' dumpsite. False waste management solutions such as waste-to-energy (WTE) incineration are still in the picture.

Now, more than ever, we need to scale up and amplify real solutions—**Zero Waste**.

ZERO WASTE: The Cornerstone of a Sustainable Circular Economy

When we talk of waste, we often think of it as something to dispose of. Hence, discussions on waste normally circles around littering and waste management and disposal. Solutions developed also often focus on waste when they are already in the bins or about to be thrown into the bin, and when they are already in the environment, as litter.

Combating the waste crisis requires us to look at waste long before it becomes discard—way up at production level. Looking at waste all the way from production allows us to see the problem holistically, and to come up with solutions that are sustainable—solutions that address the problem, not just the symptoms. It also allows us to focus not on waste management, but rather on resource management. If we efficiently manage our resources, there will be much less waste to take care of.

This is what Zero Waste is.

Simply put, Zero Waste is an innovative approach to the use of resources. It ensures resource efficiency (e.g. resources are not wasted), resource recovery (e.g., resources are reused or otherwise recycled, not burned or buried), and protection of scarce natural resources (e.g., use of renewable resources).

Currently, we are operating on a linear system—from extraction of natural materials, to production, to consumption, to disposal. This model is unsustainable. It assumes that the resources are infinite (which they are not) and that the disposed items do not cause problems (which they do).

Zero Waste is a move away from this unsustainable linear industrial system into a circular system—a system where unnecessary extraction and consumption is minimized, where waste is reduced, and where products and materials are reused or recycled back into the market.

In Zero Waste, the resources that we use can be safely and economically recycled, reused, and composted, or turned into biogas anaerobic digestion. Zero Waste also means avoiding the use of disposable products and redesigning products that are toxic-free and built to last. Zero Waste involves:

- Reducing consumption
- Reusing discards
- Product redesign
- Shift to alternative delivery systems
- Comprehensive recycling
- A ban on waste incineration
- Comprehensive composting or biodigestion of organic materials
- Citizen and worker participation
- Policies, regulations, incentives, and financing structures to support these systems

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(L) Waste pickers work in a composting facility in Chennai, India. Photo by SHERMA BENOSA | (R) Segregated waste collection in Tacloban, Philippines. Photo courtesy of MOTHER EARTH FOUNDATION.

WASTE ASSESSMENTS AND BRAND AUDITS (WABA):

Key Component of Zero Waste and Corporate Campaigning Work

Waste Assessment and Brand Audit (WABA) is a methodical process of collecting and analyzing waste to determine the amount and types of waste generated in a locality and which brands are responsible for producing certain percentages of this waste.

Zero Waste implementers conduct at-source WABA (at the point of waste generation such as households) to understand the waste generation in the community and identify the products and brands generated at the source, before they are leaked into the environment. Data from household WABA inform Zero Waste implementers and community decision makers in their policy work (e.g., policies that must be crafted to push for plastic reduction) and program work (e.g. designing an appropriate waste management program for the community).

Cleanup brand audits are conducted following cleanups (e.g., beach cleanups). This type of audit provides information on the waste that are actually leaked into the environment and evidence, among others, that plastics classified as recyclable do not necessarily get recycled.

Conducting WABA is crucial not only as an initial step in transitioning a community to become Zero Waste. It has also been a key component of various GAIA and Break Free From Plastic member organizations' corporate campaigning work.

WABAs provide evidence-based data to support calls for corporate responsibility and accountability. Such was the case when, in September 2017, #breakfreefromplastic member organizations in the Philippines conducted an unprecedented nine-day brand audit at Freedom Island³. This was replicated in 2018 during World Environment Day celebration when 10 GAIA member and partner organizations conducted brand audits in 18 states in India⁴. This brand audit proved to be the opening salvo for the 240 brand audits⁵ conducted in 42 countries in the months that followed. In 2019, GAIA Asia Pacific quantified the waste generation in the Philippines using findings of household WABAs conducted in various parts of the country. The report⁶ is being used to push for policies to reduce plastic waste generation.



Waste Assessment and Brand Audit

These worldwide coordinated brand audits have been putting much pressure on companies to be responsible and accountable for the “branded pollution” that they have been causing. It has also emboldened the Break Free From Plastic movement to issue a Corporate Leadership Challenge⁷ in October 2018 and to reinforce its corporate call on the 3Rs: **reveal** how much plastic goes into markets and environments each year; **reduce** the amount of plastic produced and packaged; and **reinvent** how goods are packaged and delivered.

Moreover, brand audits have been mobilizing citizen action and public awareness in identifying the real culprits behind the plastic pollution crisis. The industry has long been peddling the narrative that consumers and their behavior are the ones to be blamed while passing the burden of managing plastic wastes to governments using taxpayer money. Both the Zero Waste work of our member organizations and the many WABAs we have been conducting are proving these narratives wrong.

FALSE SOLUTION:

So-called “Waste-to-Energy” (WTE) Incineration

is NOT Zero Waste

With waste problems, particularly plastic pollution, largely visible in Asia, governments in the region are keen on finding immediate waste disposal solutions. Enter “waste-to-energy” incinerator proponents with the promise of making waste disappear while producing energy during the process and international financial institutions (e.g., Asian Development Bank (ADB) supporting and funding WTE projects in the region, and the governments are hooked.

WTE proponents make numerous false claims about WTE, among them, that this technology is Zero Waste. But incineration and Zero Waste are two opposite paths to resource and waste management. Incineration does not address the problem of waste generation. To the contrary, it encourages it.

Below are reasons why we need to resist WTE proposals⁸.

- *WTE plants are incinerators. They don't magically make waste disappear.*
The US Environment Protection Agency and the European Union classify waste-to-energy facilities as incinerators. They come under many names: mass burn, thermal treatment facilities, and WTE plants. Incinerator plants do not make waste and waste problems disappear. They merely transform the waste into other forms of waste such as toxic ash and air and water pollution which are harder to dispose and are usually more toxic than the original waste.
- *WTE incinerators burn resources.*
More than 90% of wastes that are burned or sent to landfills can be reused, recycled, and composted⁹. WTE incinerators need to be continuously fed thus creating a never-ending demand for more waste. This discourages waste reduction and promotes waste generation.
- *WTE incinerators consume more energy than they produce.*
In Asia, the majority of the waste produced is compostable which produce very small amount of energy when burned. In contrast, Zero Waste practices such as recycling and composting conserve three to five times the amount of energy produced by waste incineration¹⁰.
- *WTE incineration is not renewable energy and it takes investments away from real renewable energy.*
Real renewable energy is energy created from natural processes that do not get depleted, such as wind, wave, or solar energy. Municipal wastes such as paper, plastic, and glass that are burned in incinerators are non-renewable. They come from finite natural resources such as forests that are being cut down at unsustainable rates. Take for example plastic which are made from petroleum.



in Da Nang, Vietnam. Photo by SHERMA BENOSA

- WTE incinerators pose risk to the health and environment of neighboring communities as well as that of the general population.*

Even the most advanced incinerators release thousands of pollutants that contaminate the air, soil, and water which enter the food supply and concentrate up through the food chain. Aside from toxic air emissions, incineration technologies produce highly toxic by-products that are released into the environment.
- WTE incinerators contribute to climate change.*

Incinerators emit more CO₂ per megawatt-hour than coal-fired, natural-gas fired, or oil-fired power plants.
- WTE incinerators are the most expensive method to generate energy and to handle waste. They can leave the host community in big debt.*

The capital cost of new WTE facilities is twice the cost of coal-fired power plants and 60% more than the cost of nuclear energy facilities. The operations and maintenance costs are 10 times the cost of coal plants and four times the cost of nuclear plants. Moreover, tipping fee for WTE can reach as much as five times the tipping fee for a landfill¹¹.
- WTE incinerators take away jobs.*

There are no green jobs in WTE incineration. In developing countries, incinerators will take jobs away from the informal waste workers including waste pickers, recyclers, and haulers. Recycling is the livelihood of millions of waste workers and waste pickers worldwide and burning recyclables means robbing waste workers of their source of income.
- WTE incineration is not compatible with a sustainable circular economy.*

A circular economy is "one in which the value of products, materials, and resources is maintained for as long as possible, minimizing waste and resource use." WTE incinerators destroy discarded products and materials that can be recycled, reused, or composted.
- WTE is old school. The world is embracing Zero Waste.*

The world is waking up and realizing the failures of incineration. Developed countries that have previously relied on incineration are now shifting away from it. Countries are embracing Zero Waste and investing in long-term waste management strategies including shutting down their incinerators.





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SOLUTIONS OR NOT?

Not all solutions are created equal. With the rise in the volume of waste that countries around the globe need to deal with comes solutions left and right—some genuine and lasting such as Zero Waste programs, some short-term which addresses the problem in the meantime while waiting for policy shifts or what we refer to as stop gap measures, and some outright false. Here are some of them:

FALSE!

Waste-to-Energy Incineration

Melting plastic releases highly toxic emissions, which could lead to more harm than good. Workers are at risk. Over time, plastic, although already turned into a new product, breaks down or leach into microplastic and end up polluting marine life and the soil. Moreover, plastic-to-roads have so far worked only at pilot level and has not been proven to work on a large scale. This also begs the question: who bears the cost of collection of plastic waste?

Cement kilns

Cement manufacturing industries use high-temperature cement kilns to heat the mixture of limestone and clay to produce cement. Cement kilns burn waste as fuel during the process. Traditionally, coal is used but this has changed in the past with the introduction of alternative fuels composed of waste such as tires, plastic, and petrochemical waste.

Burning waste in cement kilns is just another form of incineration. It wastes resources that can otherwise be reused or recycled. Moreover, allowing plastic residuals to be used in cement kilns does not discourage people in their plastics used. To the contrary, it encourages them because the plastics can be used in cement kilns anyway. Finally, like ordinary incinerators, emissions are harmful to people's health and the environment.



(L) Chairs made out of plastic waste. Photo from PHILIPPINE STAR. | (R) Bags made out of plastic waste. Photo from WHEN IN MANILA

Plastic to roads, chairs, floor tiles, bricks, pavers, and homes

News about turning single-use plastic into roads, chairs, floor tiles, bricks, pavers, and homes have been getting attention. The process includes collecting plastic waste, cleaning it, shredding, and melting it and adding to other construction and building materials for road construction or other new materials.

Melting plastic releases highly toxic emissions, which could lead to more harm than good. Workers are at risk. Over time, plastic, although already turned into a new product, breaks down or leach into microplastic and end up polluting marine life and the soil. Moreover, plastic-to-roads have so far worked only at pilot level and has not been proven to work on a large scale. This also begs the question: who bears the cost of collection of plastic waste?

Ecobricks

More recently, ecobricks or single-use plastic bottles that contain folded or shredded single-use plastic wrappers are becoming popular as an alternative solution to the plastic pollution crisis. There are already reports about schools teaching students on how to create eco bricks as part of their livelihood education subjects. There are also news coming out on local governments in Southeast Asian countries asking their residents to turn over eco bricks to the city and municipal halls in exchange for rice and other goods.

Ecobricks should never be used as an excuse to generate waste or use single use plastic. It is a stop-gap measure in the sense that it does not really issue the root cause of plastic pollution by addressing it at source - stopping the production of single-use low-value plastic packaging. It also perpetuates the industry's narrative that plastic pollution is only a litter issue.

Turning Plastics to Various Crafts

Turning plastic waste into crafts can be a creative way of dealing with plastic waste that already exists. But just because plastics can be downcycled into other products does not mean it is okay to keep using and disposing of plastics. We still need to push for the drastic reduction of plastic production and use. Moreover, this measure does not truly address the massive plastic waste crisis: making crafts out of plastic discards only addresses a negligible percentage of the problem. It is still a stop-gap measure that simply delays the inevitable destination—disposal.

The only solution to the plastic waste crisis is to produce less of it. It involves a systemic change—and by this we do not only mean changing the product (for example, simply using an alternative to plastic), but by changing how we view and do things—and requires everyone doing their part: the people becoming more mindful of their consumption, the government banning unsustainable products and putting up efficient waste collection and management system, and corporations drastically reducing their production and use of single-use plastics and focusing on true environment-friendly and sustainable products and delivery systems.

NOTES

¹<https://www.sciencemag.org/news/2017/07/next-30-years-we-ll-make-four-times-more-plastic-waste-we-ever-have>

²Excerpt from "Discarded: Communities on the Frontlines of the Global Plastic Crisis" <https://wastetradestories.org/wp-content/uploads/2019/04/Discarded-Report-April-22.pdf>

³Groups Reveal Top Plastic Polluters Following Massive Beach Cleanup <https://www.no-burn.org/green-groups-reveal-top-plastic-polluters-following-massive-beach-cleanup-on-freedom-island/>

⁴<https://www.no-burn.org/wed-india/>

⁵<https://www.breakfreefromplastic.org/globalbrandauditreport2018/>

⁶<https://www.no-burn.org/plastics-exposed/>

⁷<https://www.breakfreefromplastic.org/wp-content/uploads/2018/10/Final-BFFP-Manifesto.pdf>

⁸<https://www.no-burn.org/wp-content/uploads/GAIA-Facts-about-WTE-incinerators-Jan2018-1.pdf>

⁹Platt, Brenda et al, Stop Trashing Climate, ILSR, Eco-Cycle & GAIA, 2008.

¹⁰Morris, Jeffrey, Comparative LCAs for Curbside Recycling Versus Either Landfilling or Incineration with Energy Recovery, The International Journal of Life Cycle Assessment, July 2005. Available at: <http://www.springerlink.com/content/m423181w2hh036n4/>

¹¹<https://k-learn.adb.org/system/files/materials/2016/12/201612-prefeasibility-study-conventional-waste-energy-project-quezon-city-philippines.pdf>



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