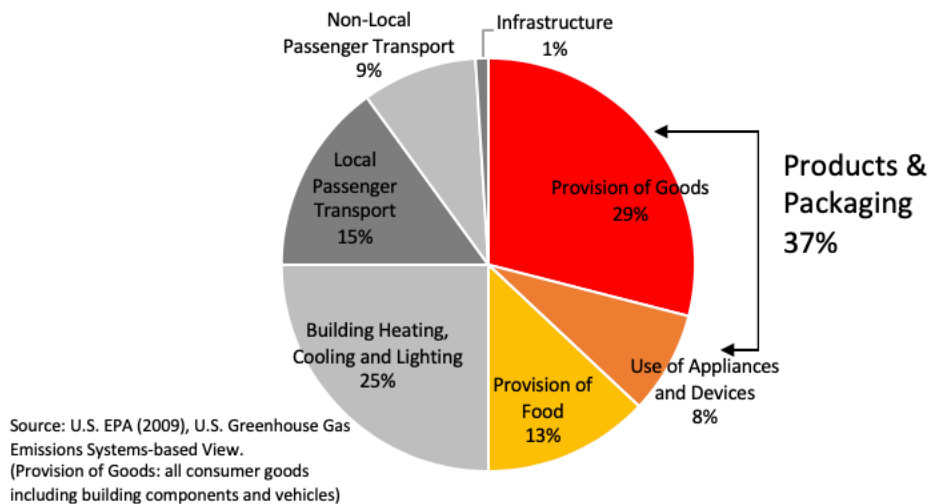


# Sierra Club Zero Waste Policy

## Background

Our current methods of extracting natural resources, turning them into products and packaging used for ever shorter periods of time, and then discarding them is not sustainable and contributes significantly to a wide variety of negative impacts such as forest and open space destruction, ocean pollution, litter, water and air pollution and climate change.

Traditional greenhouse gas emissions inventories look at emissions from a “production-based view,” where emissions are apportioned based on economic sectors. In 2009, to better understand and describe the connections between materials and land management and climate change, the U.S. EPA evaluated U.S. greenhouse gas emissions using a “system-based view,” where each system represents and comprises all the parts of the economy working to fulfill a particular need.<sup>1</sup> According to this analysis, about half of all greenhouse gas emissions in the U.S. are derived from the extraction, production, distribution, consumption and disposal of products, packaging and food. These emissions could be significantly reduced through implementation of Zero Waste policies and programs. Overconsumption should be vigorously addressed, with the goal of reducing the production and consumption of products and



packaging.

## Zero Waste Definition

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<sup>1</sup> “Opportunities to Reduce Greenhouse Gas Emissions through Materials and Land Management Practices,” U.S. Environmental Protection Agency Office of Solid Waste and Emergency Response, September 2009 <https://www.epa.gov/sites/production/files/documents/ghg-land-materials-management.pdf>

This Zero Waste policy describes goals, strategies and measures for reducing and eventually eliminating wasting and the resulting negative impacts. The Sierra Club recognizes the internationally peer-reviewed definition of Zero Waste:

Zero Waste is the conservation of all resources by means of responsible production, consumption, reuse, and recovery of products, packaging, and materials without burning, and with no discharges to land, water, or air that threaten the environment or human health.

### **Roles to Achieve Zero Waste**

Individuals, governments and the private sector all have a role in reinventing our materials use through individual and collective action and changes in policy and attitudes.

- **People** can take personal responsibility to reduce their own consumption, reuse, and recover products, packaging and materials, while working together to inspire and challenge government and the private sector to take action
- **Government** can adopt and implement policies and plans, educate residents and businesses, and lead by implementing Zero Waste programs and infrastructure<sup>2</sup>
- The **private sector** can redesign products and packaging and implement Zero Waste strategies

Sierra Club members and the public need to be involved in the development of state and local Zero Waste Plans, planning and siting for needed reuse, recycling and composting facilities, and monitoring of landfill and incinerator<sup>3</sup> projects in operation and following closure. Community advisory committees should be established and engaged in a democratic and participatory manner, and all information and documents should be easily accessible and available to the public well in advance of meetings. By doing so, we can ensure that the local government considers the complete environmental health and social costs borne by frontline communities, including impacts of emissions, through existing laws, new policies and programs.

### **Zero Waste Human Rights Principles**

Governments and communities must adopt human rights principles in implementing Zero Waste policies and programs. Governments need to ensure that Zero Waste Plans incorporate frontline communities and ensure participation across race, class, gender/sexuality for both

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<sup>2</sup> For descriptions and examples of 100 policies local governments have adopted, see USEPA Managing and Transforming Waste Streams website: <https://www.epa.gov/transforming-waste-tool>.

<sup>3</sup> See definition of Incineration in the Hierarchy below.

Zero Waste projects and Zero Waste job creation. Resources should be reallocated to communities that have been disinvested and burdened with the cumulative impacts of environmental degradation caused by the waste management system.

Municipalities need to provide adequate funding, technical expertise, support policies and assistance to frontline communities to implement Zero Waste policies and programs. Municipal Zero Waste jobs need to pay prevailing wages, protect workers' rights to organize, guarantee workplace protections against wage theft and sexual harassment, provide healthcare benefits and hire local workers. A 'just transition strategy' should be developed for workers whose jobs are lost as a result of closing down garbage incinerators and landfills to support them with job training, healthcare, housing assistance and pension support. Government should, support, encourage and promote the reuse of products packaging and material, eliminate subsidies for using or wasting virgin resources, and give precedent to durable long-lasting products made with recycled content. State and federal laws should be promoted to create new incentives for waste prevention, reuse, recycling, and composting.<sup>4</sup>

### **Unacceptable Practices**

The Sierra Club opposes incineration of all kinds. Incineration is not considered acceptable because of its adverse environmental and health effects and the destruction of materials that could be conserved while saving energy through other management methods. Incineration is a form of destructive disposal and no types of incineration (including "waste to energy" and "plastic to fuel" mislabeled as "chemical recycling"<sup>5</sup>) are considered recycling. While some advanced waste treatment technologies are promoted as alternative energy producing, the energy conserved by recycling and composting the source materials exceeds the amount of energy produced by these technologies by three to five times.<sup>6</sup> Furthermore, such facilities tend to be sited in disadvantaged communities, thus raising environmental justice issues. The Sierra Club similarly opposes waste deregulation where more toxic materials are released into the environment.<sup>7</sup>

Efforts to reduce overconsumption and its upstream impacts from resource extraction, manufacturing and distribution are necessary to directly achieve Zero Waste. For example, upstream impacts of food supply can be reduced by eating locally and lower on the food chain. Pollution related to production of food, especially in Concentrated Animal Feeding Operations.

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<sup>4</sup> <https://www.sierraclub.org/sites/www.sierraclub.org/files/uploads-wysiwig/compost.pdf>

<sup>5</sup> For more information on concerns with chemical recycling, see [www.no-burn.org](http://www.no-burn.org).

<sup>6</sup> Morris, 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://zerowaste.com/images/comparative\\_lcas-final.pdf](http://zerowaste.com/images/comparative_lcas-final.pdf)

<sup>7</sup> See "waste deregulation" in definitions below.

can be grossly disproportionate to the amount of food produced.<sup>8</sup>

Where threats of serious or irreversible harm to people or natural systems exist, the lack of full scientific certainty relating to cause and effect shall not be viewed as sufficient reason to postpone preventative measures.<sup>9</sup> The Sierra Club recognizes the impacts of plastics in the environment worldwide, especially in our oceans and waterways. We call for the minimization and elimination of single-use plastics such as cutlery, cups, lids, straws, bags, beverage bottles, cigarette butts, and expanded polystyrene packaging. We support actions to prevent the introduction of microplastics into the environment, and support efforts to remove those already there. While biodegradable and compostable plastics and other materials are often presented as an easy alternative for single-use plastics, such substitution perpetuates our wasteful production and throw-away practices. Single-use plastics (including compostable plastics) must be phased out, and materials must be redesigned for durability and reusability.<sup>10</sup>

## **Product Policies**

A wide variety of product policies should be adopted to make these shifts, including deposit return systems<sup>11</sup>, bans, minimum recycled content requirements, advanced recycling fees, certifications and policies that encourage, and promote durability, reuse, and refill over recycling. The Sierra Club specifically supports state and national bottle bills as a vital strategy to increase the collection and reclamation of clean materials for recycling into new materials. Toxic materials used in products and packaging and produced as byproducts in production processes should be minimized and phased out using bans, Green Chemistry Programs, and other efforts.<sup>12</sup>

Sierra Club appreciates the goal of “polluter pays” and asks industry to do their fair share of reducing the volume and toxicity of their products and packaging. Product stewardship programs for hard-to-recycle products, such as electronics and paint, have had some success. However, the Sierra Club has concerns about how extended producer responsibility policies have been implemented in North America, particularly for printed paper and packaging.

Producer responsibility (or “product stewardship”) means whoever designs or produces a product takes responsibility for minimizing the product's environmental and social impacts

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<sup>8</sup> <https://www.sierraclub.org/policy/agriculture/food>

<sup>9</sup> <https://www.sierraclub.org/policy/precautionary-principle>

<sup>10</sup> The Sierra Club acknowledges that some single-use plastics may be necessary for medical use and in response to natural disasters.

<sup>11</sup> See details in adopted Sierra Club policy at: <https://www.sierraclub.org/policy/beverage-containers>

<sup>12</sup> See <https://www.sierraclub.org/policy/hazardous-waste-management>, and <https://www.sierraclub.org/policy/environmentally-hazardous-substances>

throughout all stages of the products' life cycle. The greatest responsibility lies with producers (brand owners) because they make critical design and marketing decisions. Products and services put into commerce should be designed to make the return of discarded products for reuse, repair, refill, repair and at the end of its life recycling as easy as purchasing new products. This behavior needs to be guided by a system of government standards, enforcement and transparent management of costs and revenues of the system. There needs to be fiscal responsibility, but not necessarily physical responsibility. Producer responsibility needs to focus upstream on reducing and reuse, and the use of recycled content products. Producers should help finance, promote and incentivize collection, marketing, reuse, refill and recovery operations and infrastructure, be it direct return or local recovery operations.

### **Highest and Best Use**

Quantities and types of discarded materials managed through various methods should be chosen to attain the highest and best use of the discarded material and not transferring toxics to another source (e.g. sewage sludge, recycled goods or compost). Upstream regulation and continued research on procedures and technologies may allow higher uses of challenging materials, such as sewage sludge.<sup>13</sup> Instead of opting for mixed waste processing (aka “Dirty MRFs”), communities should implement best practices for the separate collection of recyclables. Recycling programs should be designed to minimize contamination and to support the local manufacturing of recyclables into new products. In conjunction with source reduction, reuse, and composting, the recycling of valuable materials for their highest and best use is essential to a sustainable environmental, energy, and economic future.

The Sierra Club supports the *Hierarchy to Reduce Food Waste and Grow Community*.<sup>14</sup> That Hierarchy calls for reducing wasted food, donating surplus food to people, then to animals, then to compost at home and in small-scale decentralized operations, then medium-scale locally based composting, then centralized composting or anaerobic digestion. All organic materials, especially food, should be banned from landfills and incinerators. Efforts should be made to reduce the energy to produce and transport a given amount of food. Similarly, organic and pesticide-free food is not only better to consume, any discards produce higher quality compost.

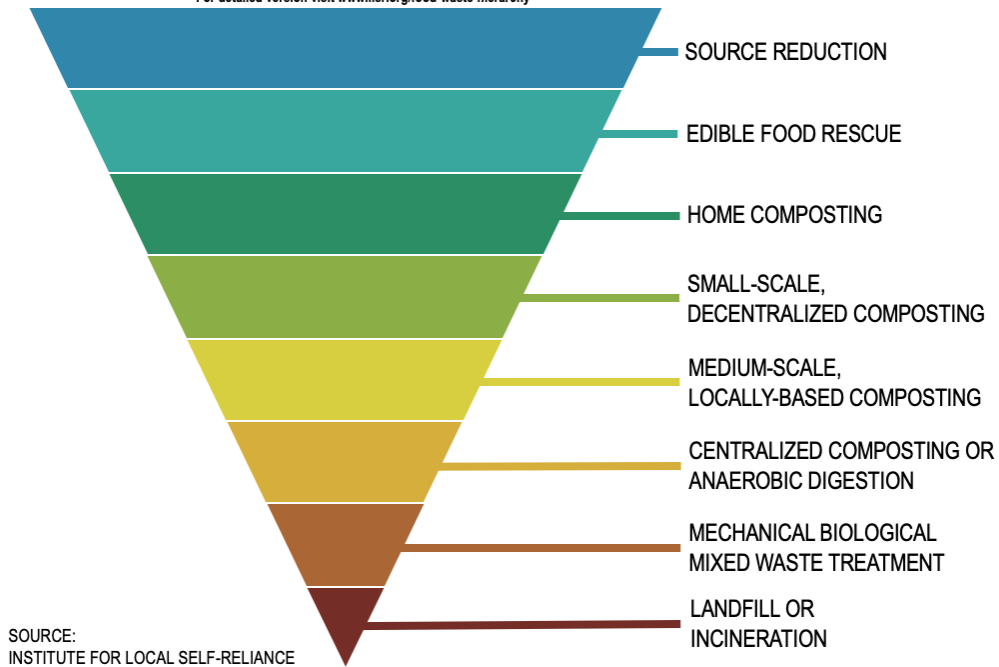
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<sup>13</sup> See <https://www.sierraclub.org/sites/www.sierraclub.org/files/uploads-wysiwig/LandApplicationSewageSludge.pdf>

<sup>14</sup> Developed by the Institute for Local Self-Reliance, <https://ilsr.org/food-waste-hierarchy/>

## HIERARCHY TO REDUCE FOOD WASTE AND GROW COMMUNITY

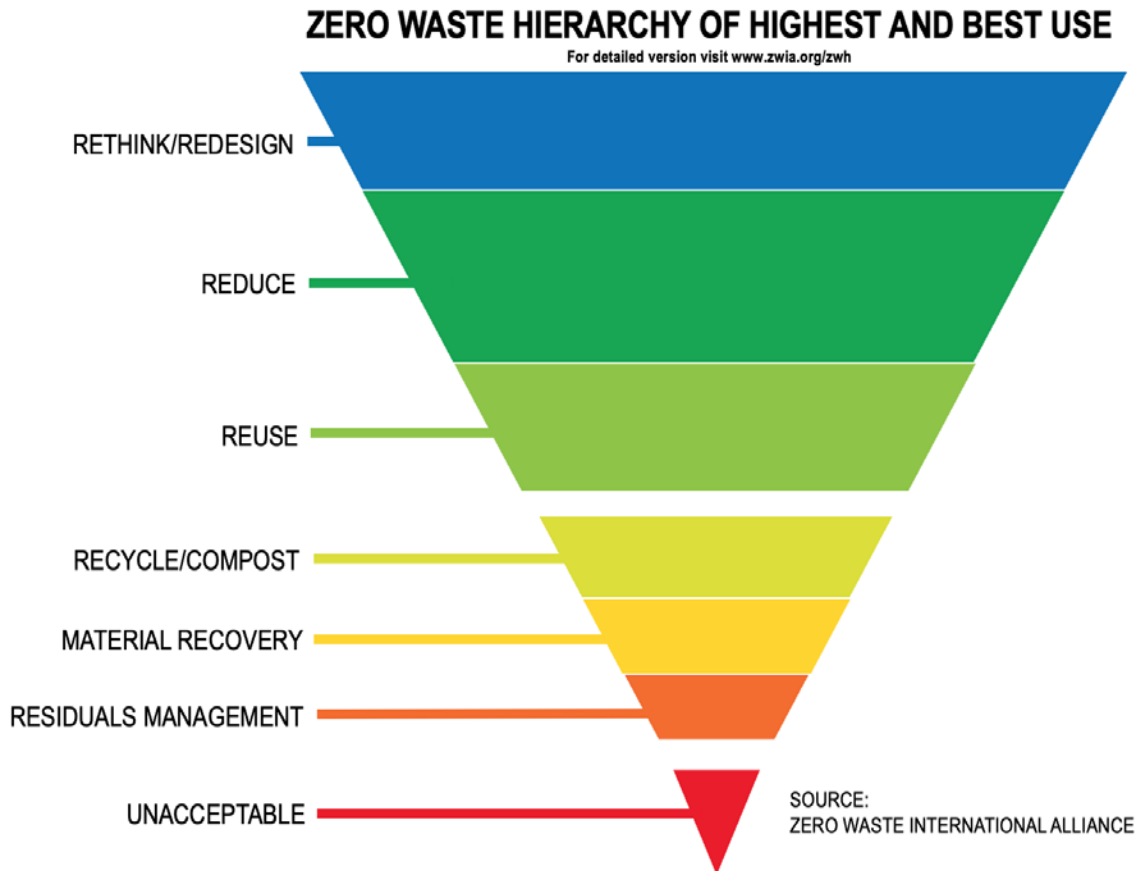
For detailed version visit [www.ilsr.org/food-waste-hierarchy](http://www.ilsr.org/food-waste-hierarchy)



The Sierra Club also supports the following international *Zero Waste Hierarchy of Highest and Best Use* and supports individual, government and private sector and industry initiatives to pursue such strategies to achieve Zero Waste.

Details for implementing this policy are contained in separate Guidelines for Implementing this Zero Waste Policy. Use of the Guidelines, which are to be developed by the Sierra Club's Zero Waste Team in conjunction with this policy, is essential.

## International Zero Waste Hierarchy of Highest and Best Use



### Purpose

- The Zero Waste Hierarchy describes a progression of policies and strategies to support the Zero Waste system, from highest and best to lowest use of materials. It is designed to
- be applicable to all audiences, from policy-makers to industry and the individual. It aims to provide more depth to the internationally recognized 3Rs (Reduce, Reuse, Recycle);
- to encourage policy, activity and investment at the top of the hierarchy; and to provide a guide for those who wish to develop systems or products that move us closer to Zero
- Waste. It enhances the Zero Waste definition by providing guidance for planning and a way to evaluate proposed solutions.

### Rethink

- Support and expand systems where product manufacturing considers the full life-cycle of their product in a way that follows the Zero Waste Hierarchy and moves toward more

sustainable products and processes. Producers take back their products and packaging in a system that follows the Zero Waste Hierarchy.

- Identify and phase out materials that cause problems for Closed Loop Systems\*
- Facilitate and implement policies and systems to encourage and support Local Economies\*
- Re-consider purchasing needs and look for alternatives to product ownership
- Provide information to allow for informed decision-making
- Be aware of and discourage systems that drive needless consumption

### **Redesign**

- Design and purchase products from reused, recycled, sustainably harvested renewable, or non-toxic materials to be durable, repairable, reusable, fully recyclable or compostable, and easily disassembled
- Shift funds and financial incentives to support a Circular Economy\*\* over the harvesting/extracting and use of virgin natural resources
- Enact new incentives for cyclical use of materials, and disincentives for wasting
- Facilitate change in how end users' needs are met from "ownership" of goods to "shared" goods and provision of services

### **Reduce**

- Plan consumption and purchase of perishables to minimize discards due to spoilage and non-consumption
- Implement Sustainable Purchasing\*\* that supports social and environmental objectives as well as local markets
- Minimize quantity and toxicity of materials used
- Minimize ecological footprint required for product, product use, and service provision
- Choose products that maximize the usable lifespan and opportunities for continuous reuse
- Choose products that are made from materials that can be easily and continuously recycled
- Prioritize the use of edible food for people



- Prioritize the use of edible food for animals

### **Reuse**

- Maximize reuse of materials and products
- Maintain, repair or refurbish to retain Value\*\*, usefulness and function
- Remanufacture with disassembled parts; dismantle and conserve “spare” parts for repairing and maintaining products still in use
- Repurpose products for alternative uses
- Support deposit/return systems for containers and other hard to recycle products

### **Recycle/Compost**

- Support and expand systems to keep materials in their original product loop and to protect the full usefulness of the materials
- Maintain diversion systems that allow for the highest and best use of materials, including organics
- Recycle and use materials for as high a purpose as possible
- Develop resilient local markets and uses for collected materials
- Provide incentives to create clean flows of compost and recycling feedstock
- Support and expand composting as close to the generator as possible (prioritizing home or on site or local composting)
- Whenever home/decentralized composting is not possible, consider industrial composting, or if local conditions require/allow, anaerobic digestion

### **Material Recovery**

- Maximize materials recovery from mixed discards and research purposes after extensive source separation
- If conditions allow, recover energy using only systems that operate at Biological Temperature and Pressure\*\*

## **Residuals Management**

- Examine materials that remain and use this information to refine the systems to rethink, reduce, reuse, and recycle in order to prevent further discards
- Ensure minimization of impacts by means of biological stabilization of fermentable materials.
- Encourage the preservation of resources and discourage their destructive disposal or dispersal
- Plan systems and infrastructure to be adjusted as discards are reduced and its composition changes
- Minimize Gas Production and Release\*\* and maximize gas collection
- Use existing landfill capacity and maximize its lifespan. Ensure it is responsibly managed\*\*
- Contain and control toxic residuals for responsible management

## **Unacceptable**

- Don't support policies and systems that encourage the destructive disposal of organics and/or the destruction of recyclables
- Don't support energy recovery and/or destructive disposal systems that are dependent upon the continued production of discards
- Don't allow the Incineration\*\* of discards
- Don't allow toxic residuals into consumer products or building materials

### **\*\*Definitions:**

#### **Biological Temperature and Pressure**

The ambient temperature and pressure that occurs naturally without the use of added energy, or in any case not above 100 degrees Celsius to change it, such as anaerobic digestion.

#### **Circular Economy**

An industrial economy that is, by design or intention, restorative and in which material flows are of two types, biological nutrients, designed to re-enter the biosphere safely, and technical nutrients, which are designed to circulate at high quality without entering the biosphere. Materials are consistently reused rather than discharged as waste.

### **Closed Loop System**

A system not relying on matter exchange outside of the system, as opposed to open loop where material may flow in and out of the system.

### **Destructive Disposal**

Discarded materials placed in a landfill or in an Incineration\*\* facility

### **Diversions**

An activity that removes a material from Destructive Disposal.

### **Incineration**

Incineration is a form of Destructive Disposal via combustion or thermal conversion/treatment, using temperatures above 100 degrees Celsius, of discarded materials into ash/slag, syngas, flue gas, fuel, or heat. Incineration includes facilities and processes that may be stationary or mobile, may recover energy from heat or power and may use single or multiple stages. Some forms of incineration may be described as resource recovery, energy recovery trash to steam, waste to energy, energy from waste, fluidized bed, catalytic cracking, biomass<sup>15</sup>, steam electric power plant (burning waste), pyrolysis, thermolysis, gasification, plasma arc, thermal depolymerization or refuse derived fuel.

### **Minimize Gas Production and Release**

This means keeping out source-separated organics and biologically stabilizing the materials that go into landfill. For existing landfill cells that already contain un-stabilized organics, the gas production should be minimized by keeping out rainwater and not recirculating leachate. Minimize methane release by permanently capping closed cells with permanent covers and installing gas collection systems within months of closure (not years). Maintain high suction on collection wells and do not damp down wells or rotate off the wells to stimulate methane production. Filter toxins in the gas into a solid medium that is containerized and stored on site. Note that this is not considered a renewable energy.

### **Problematic for a Closed Loop System**

Materials that make it hard to recycle or compost the materials themselves or other materials. These may be contaminants for a material (like some forms of biodegradable plastics or stickers on fruit and vegetables) or materials that clog processing systems (like plastic bags)

### **Responsibly Managed Landfills**

Manage landfills to minimize discharges to land, water or air that are a threat to life on Earth. This must include plans for closure and financial liability.

### **Sustainable Purchasing**

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<sup>15</sup> The Sierra Club has more detailed policy on biomass under "Incineration of Municipal Solid Waste" at: <https://www.sierraclub.org/sites/www.sierraclub.org/files/energy.pdf>

The purchase of goods and services that take into account the economic value (price, quality, availability and functionality) and the related environmental and social impacts of those goods and services at local, regional, and global levels.

### **Value**

The importance, worth, or usefulness of something that may be economic, social, environmental, or sentimental.

### **Waste Deregulation**

The act of removing environmental health and safety regulations from waste, often treating it as if it is no longer waste. Such as the U.S. EPA's Non-Hazardous Secondary Materials rule which allows burning of waste in various applications, and as a consequence, no longer subject to stricter air pollution requirements associated with waste incineration. This also includes allowing toxic or potentially toxic waste streams to be recycled, composted, or managed in a way that is or would be a threat to planetary, human, animal, or plant health.

Further examples of waste deregulation include but are not limited to: using hazardous waste, low-level radioactive waste, sewage sludge, or composted MSW residuals as soil amendment or fertilizer, incorporating incinerator ash or coal power plant fly ash into cement and artificial underwater reefs; incorporating radioactive metals and other toxic materials into the general material stream and consumer products without any limitation or labeling, using fly ash and sewage sludge as mine fill (filling in surface coal mines) without any liner systems to protect groundwater; using incinerator ash, sewage sludge, construction/demolition debris, auto shredder residue, and other hazardous waste streams as alternative daily cover at landfills.

### **\*Guiding Principles**

#### **Precautionary Principle**

When an activity potentially threatens human health or the environment, the proponent of the activity, rather than the public, should bear the burden of proof as to the harmlessness of the activity. Where there are threats of serious or irreversible damage, lack of full scientific certainty shall not be used as a reason for postponing measures to prevent environmental degradation.<sup>16</sup>

#### **Polluter Pays**

Whoever causes environmental degradation or resource depletion should bear the “full cost”. This encourages industries to internalize environmental costs and reflect them in the prices of

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<sup>16</sup> The Sierra Club policy has slightly different wording: <https://www.sierraclub.org/policy/precautionary-principle>

the products

### **Opportunity Costs**

Consider opportunity costs of investments and ensure investments occur as high as possible on the Hierarchy

### **Closed Loop Systems**

Design systems to be closed loop rather than linear in their use of resources

### **Sustainable Systems**

Develop systems to be adaptable, flexible, scalable, resilient, and appropriate to local ecosystem limits

### **Information & Improvement**

Collect information on systems and use as feedback for continuous improvement

### **Materials Are Resources**

Preserve materials for continued use and use existing materials before harvesting virgin natural resources

### **Highest and Best Use**

Creating and keeping materials and products for a use as high on the hierarchy as possible and in the useful loop as long as possible. Keeping materials from being downcycled where the number of future uses or options are limited. Source separate items and materials to the extent necessary to ensure clean and marketable products and materials for reuse, recycling and composting streams

### **Minimize Discharges**

Minimize all discharges to land, water or air that may be a threat to planetary, human, animal or plant health, including climate changing gases

### **Conservation of Energy**

More energy can be saved, and global warming impacts decreased, by reducing waste, reusing products, recycling and composting than can be produced from burning discards or recovering landfill gases

### **Local Economies**

Support the growth and expansion of local economies (production, repair, and processing) in order to reduce greenhouse gases from transportation, improve accountability, and increase repair and parts opportunities

### **Close to Source**

Processes to occur as close to the source as practical

### **Engage the Community**

Promote changes and systems that work with communities to facilitate meaningful and

sustained participation, increase understanding, and influence behavior change and perceptions

**Do Not Export Harm**

Avoid the export of toxic or potentially toxic waste or materials to economically challenged nations and avoid the export of materials with limited, undefined recycling markets that will be either landfilled or incinerated in another region.

**Approved by the Sierra Club Board of Directors December 19, 2019.**