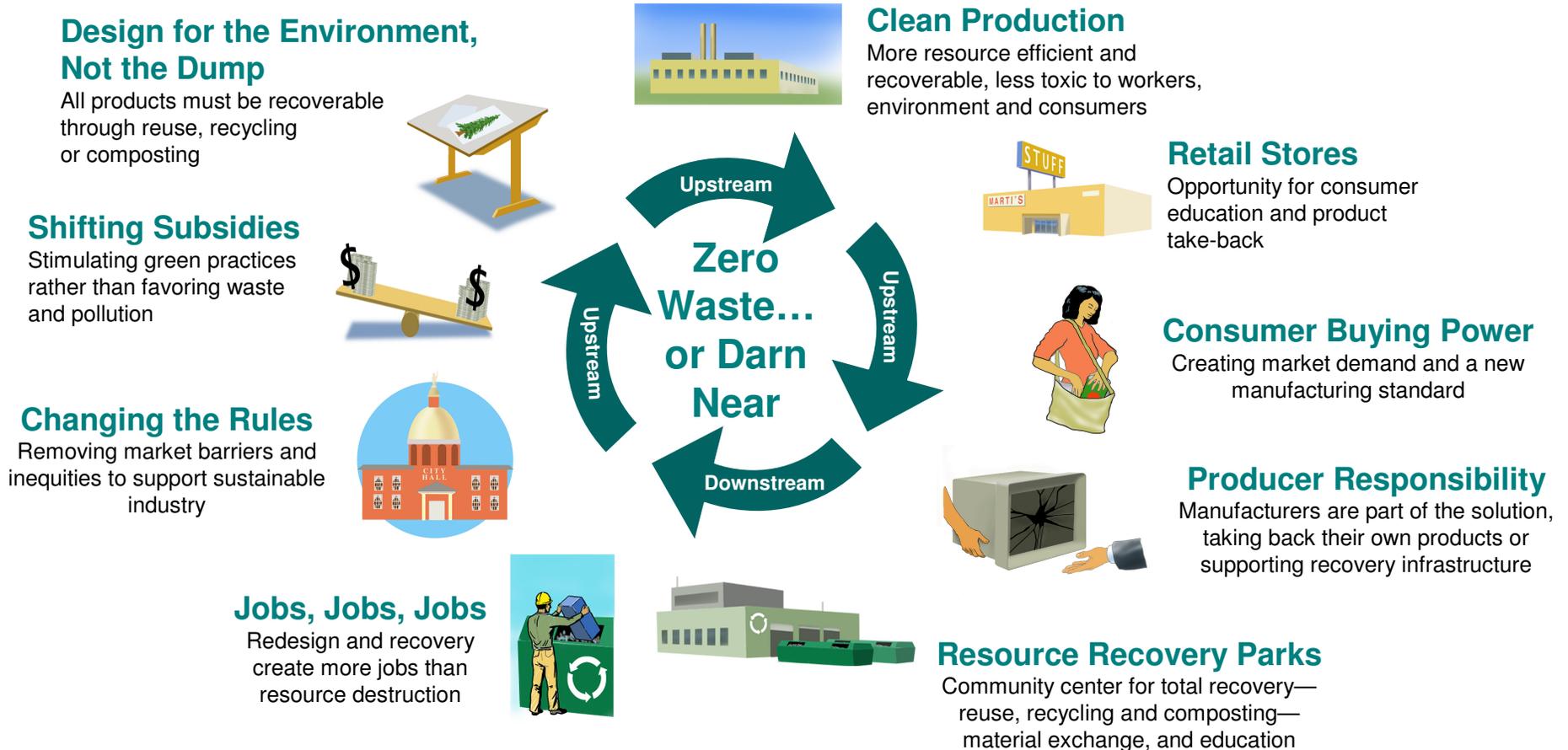


# The Zero Waste Economy

## Designing a Full-Cycle System—Upstream AND Downstream



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## Figure 1: Zero Waste Economy

An environmentally and economically sustainable system where resources are kept in the production cycle



Rather than looking at our production systems as one way and linear, we can redesign them to be cyclical, as in nature, where there is no such thing as “waste” and materials are kept in the production cycle. Zero Waste is emerging as a paradigm shift, a new, comprehensive socio-technical system that addresses our resource use from product design to disposal.

### Changing the Rules of the Game

We need to put policies and practices in place that favor environmentally and economically sustainable practices over wasteful, polluting, and ultimately costly practices. Such policies would include creating financial incentives for businesses and residents to recycle more and create less waste, banning toxic products from landfills or incinerators, prohibiting the sale of unnecessarily toxic or polluting products, essentially putting policies in place that make it easy to recover materials instead of waste them.

### Shifting Taxpayer Subsidies Away From Wasteful and Polluting Industries and Into Supporting Environmentally-Friendly Practices

Federal tax subsidies created more than 100 years ago to spur our change from an agrarian society to an industrialized society still exist, giving a financial incentive to industries to make products from virgin materials. As long as these subsidies remain in place, the devastation of the environment will continue. These are not paltry sums driving today’s resource extraction bonanza—according to the report, “Welfare for Waste,” direct subsidies to the timber, hard-rock mining, and energy industries reach \$2.6 billion per year in taxpayers’ funds.

### Design for the Environment (DFE)

It's time to stop waste before it happens – at the designer's desk. Instead of designing products without regard for the amount or type of resources used, the product's toxicity, or the product's eventual recovery, under DFE, all products and packaging will be manufactured with the use of non-toxic materials, and designed for either reuse, recycling or composting.

### Clean Production

Under the current system, the fastest and cheapest production methods win out above the health and safety of the workers, the community, and the environment. Companies unwilling to meet the environmental and worker protection standards in the developed world have simply relocated to exploit the workers and the environment of developing countries. By providing incentives for clean production methods, we can discourage this “fight to the bottom” mentality and award efforts to protect workers and the environment.

### The Role of Distribution/Retail in the Zero Waste System

Within the Zero Waste system, distribution centers work with manufacturers to reuse packaging such as pallets and crates and to reduce unnecessary packaging. Retailers convey consumer habits and preferences upstream to the manufacturers where consumer pressures can lead to better design. Retailers may also support downstream infrastructure such as Resource Recovery Parks through financial contributions or informational displays. Distributors and retailers serve as education centers to inform consumers about the proper disposal methods for items such as motor oil, electronics, and batteries. In all these ways, distributors expand upon their current roles by acting as a go-between for manufacturers and consumers in both directions.

### The Empowered Consumer

The empowered consumer is essential in all facets of Zero Waste. First, the consumer uses their buying power to demand non-toxic and easily reused, recycled, or composted products. The consumer dollar is the ultimate voice to industry, particularly in the U.S., and will be the driving force in changing our consumption and disposal patterns. Reduce and reuse also begin with the consumer—they choose materials that are minimally packaged and less toxic, thus rewarding those manufacturers who take responsibility for their products and packaging, and providing the financial incentive for other companies to follow suit.

### Extended Producer Responsibility (EPR)

EPR puts the legal, financial, and environmental responsibility for materials entering the waste stream with the manufacturer, not on the consumer or the local government at the end of the product's or packaging's life cycle. The end result is a fundamental shift in responsibility and financing so that manufacturers redesign products to reduce material consumption and facilitate reuse, recycling and recovery.

### Investing in Recovery Infrastructure, Not Landfills

Rather than using the tax base to build new landfills or incinerators and then to clean up the resulting contamination, communities working towards Zero Waste invest in recycling, composting, and reuse facilities called “Resource Recovery Parks.” When the true costs of environmental pollution resulting from landfills or incinerators are accounted for, these cleaner Resource Recovery Parks attract the public's enthusiasm, pride and market investments.

### Creating Jobs from Discards: The Job Potential of the Zero Waste System

Wasting materials in a landfill or incinerator also wastes jobs that could be created if those resources were preserved. According to the report *Wasting and Recycling in the United States 2000*, "On a per-ton basis, sorting and processing recyclables alone sustains ten times more jobs than landfilling or incineration." In its report *Resources up in Flames*, the Institute of Local Self-Reliance discusses how remanufacturing offers the biggest pay-off in recycling. Recycling-based manufacturers create more jobs at higher wages than sorting operations. In fact, some recycling-based paper mills and plastics product manufacturers employ 60 times more workers on a per metric ton basis than do landfills. Rather than destroying the value of society's discards in incinerators and landfills, this value is protected and leveraged to create new local wealth.

**Figure 2: Our Current Linear Wasting System**  
A costly one-way street



Our current production systems are linear, designed as if there are no limits to our natural resources. Products are born of environmentally-destructive activities such as clearcutting, strip mining and drilling, which result in soil erosion, habitat loss, and severe air, soil, and water contamination. We as taxpayers unwittingly encourage this wasteful and polluting behavior through governmental subsidies at three different stages: (1) When resources are extracted to make the product, financial incentives and tax breaks are given to industries that extract virgin resources. (2) When toxins enter our air and water supplies during the manufacturing process, the taxpayer helps pay to clean up these messes through programs such as the federal Superfund program. (3) At the end of the products' lives, taxpayers pay again for the cleanup of toxins, which leak into the groundwater from landfills and billow into the air from incinerators.