

# Performance Track Leading Practices

## Epson Portland Diverts 100 Percent of its Waste from the Landfill

### Costs and Benefits of Epson Portland's Waste Management Program\*

Costs	Savings and Other Benefits
Setting up recycling program with bins.	Reduces operating cost as materials are reused and disposal avoided.
Cost of recycling if it is not free.	Anticipates rising cost of landfilling.
Variable cost of haulage—changes with fuel prices.	Creates new capabilities in waste management and opportunities for product innovation.
Handling fee at Covanta, waste-to-energy plant.	Encourages employee engagement and community partnerships.
Monthly excise fee for not being a participant in the local landfill.	Provides renewable energy and reduces facility impact on land and watersheds.
Range of costs depending on size and scale of a facility's waste stream.	Provides marketable improvements in corporate environmental performance.

\*as of Jan. 2009

### PERFORMANCE TRACK FACILITY

Epson Portland Inc.,  
Hillsboro, Oregon

### GOAL CATEGORY

Waste

### RELATED INDICATORS

Non-product Outputs: non-hazardous waste generation (tons)

### OVERVIEW

Since 2000, Epson Portland, Inc. (EPI) has been responsibly diverting 100 percent of its waste from the landfill and continues this commitment as a charter member of the National Environmental Performance Track program. The ink cartridge manufacturing facility integrates continuous waste management improvements through waste prevention and a comprehensive recycling program. Since joining Performance Track, EPI has recycled or otherwise diverted more than 8,143,000 pounds of materials from the landfill, using waste management as a platform to engage employees and community members in the environmental improvement process.

In 2008, EPI reduced or recycled approximately 73 percent of its overall waste. Currently, all non-reusable and non-recyclable materials that would otherwise go to the local landfill are sent to Covanta Energy in Brooks, Oregon, where solid waste is incinerated to create energy—a process referred to as waste-to-energy. EPI pays a monthly excise fee for not being a participant in the local landfill, along with the haulage cost and the cost of disposal at the waste-to-energy plant.

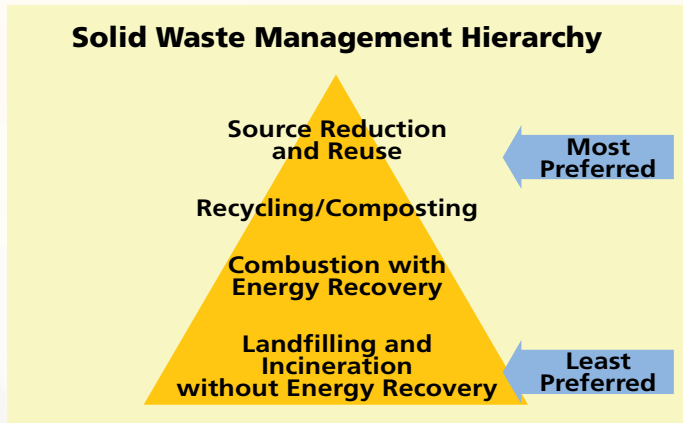
### EPI'S WASTE MANAGEMENT PROGRAM

EPI started with waste-to-energy and recycling as a baseline improvement at its facility in 2000 and continues to pursue new and creative ways to reduce/recycle more materials. The facility's waste management program uses a multi-tiered approach that involves:

- ★ The reclamation and regrinding of waste plastic for reuse in the molding of new ink cartridge parts, which saves on raw materials.
- ★ The recapturing and reuse of waste water from its water purification system (for ink manufacturing) as flush water for toilets.
- ★ The reduction in use of cushioning materials for bulk-packed ink cartridges, which has saved more than 34,000 cubic feet of bubble pack per year.
- ★ The reuse of 55-gallon ink barrels rather than recycling them.
- ★ The collection of all recyclable materials across every segment of the facility, including partnering with a neighboring facility to recycle Styrofoam waste.
- ★ Quality-related activities such as enhanced product quality and consolidation of quality testing, leading to material and waste savings.



- ★ Sending remaining solid waste that cannot be reduced or recycled to the waste-to-energy plant.<sup>1</sup>



Source: EPA Non-Hazardous Waste website: <http://www.epa.gov/osw/basic-solid.htm>.

## IMPLEMENTATION OF EPI'S ZERO WASTE TO LANDFILL PROGRAM

Having a well-diffused environmental management system at EPI has empowered employees to come up with innovative ideas, and has kept environmental improvement issues such as waste management at the forefront of continuous improvement efforts. Employees at EPI submit and get rewarded for their improvement ideas on topics such as quality, process, and environmental/safety enhancement. Through this program—called “E-Kaizen” or Epson-Kaizen (Kaizen means “continual improvement” in Japanese)—employees actively support facility-level environmental improvement, particularly with regard to waste.

Feedback from staff encouraged EPI to begin recycling Styrofoam in 2008. EPI published an in-house newsletter article on this recycling initiative, and a manager from a neighboring facility contacted EPI for more information after reading the article, realizing that all of her production-generated Styrofoam was being sent to the landfill. EPI and the neighboring facility formed a recycling partnership, and now share a truck that loads Styrofoam from both facilities before hauling it to Portland to be recycled free of charge. This partnership keeps at least 1,680 pounds or 6,720 cubic feet of Styrofoam per year out of the landfill, not to mention the emissions saved by consolidating trips. Building a network of recycling partnerships allows EPI to share best practices and to continually refine and improve its own waste management practices by learning from what other facilities are doing.

Data collection for waste improvements at EPI comes from Covanta disposal bills and invoices from the recycling companies, which are monitored on a monthly basis. At Covanta, the heat released from burning solid waste creates steam that turns giant turbines and generates electricity; the remaining ash is used as raw material in asphalt. Because no new fuel sources are used other than the waste

<sup>1</sup> After source reduction and recycling options are exhausted, incineration for energy is the next environmentally preferred method of treatment. See <http://www.epa.gov/osw/basic-solid.htm>.



*EPI employee loading Styrofoam to be recycled*

that would otherwise be sent to landfills, the incineration of solid waste can be considered a renewable power source.<sup>2</sup>

## BENEFITS OF EPI'S WASTE MANAGEMENT PRACTICES

Epson has broadened its waste management efforts to include local civic involvement and community support. During the Earth Day Electronics Collection Event, held annually since 2001, employees and community members bring in old or unwanted electronics and dispose of them to be recycled free of charge. In all, more than 199,000 pounds—nearly 100 tons—of electronics have been diverted from the landfill since 2001, including 2,357 monitors and television sets and 1,548 computers. Epson's engagement with the community strengthens its stakeholder relationships and demonstrates how responsible waste management can create value for an organization.

By significantly expanding the variety of materials it recycles, EPI has enhanced its environmental performance while developing beneficial relationships with its community, its employees, and with partner facilities. Waste recovery and reduction have also yielded a number of cost savings in terms of reduced material procurement and disposal costs. The cost of sending waste to the waste-to-energy plant is nominally more than conventional landfilling, and must be viewed in the context of its environmental benefits: waste-to-energy reduces the volume of waste going into landfills, destroys bacteria and harmful compounds, prevents methane from being created, uses less land, and can be a renewable energy source for the local community.

## RESOURCES FOR MORE INFORMATION

- ★ EPA Non-Hazardous Industrial Waste site [<http://www.epa.gov/osw/nonhaz/industrial/index.htm>] covers management practices for commercial and industrial waste to help facilities meet waste reduction and recovery goals.
- ★ EPA WasteWise [<http://www.epa.gov/epawaste/partnerships/wastewise/index.htm>] is a voluntary partnership that helps facilities reduce and recycle municipal solid waste and selected industrial wastes.

<sup>2</sup> <http://www.epa.gov/cleanenergy/energy-and-you/affect/municipal-sw.html>