



# EnviroScope

ENVIRONMENTAL WHITE PAPER FOR ALLIED WORLD POLICYHOLDERS

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## Adopting Better Waste Minimization and Recycling Approaches

Industry media is alight with supporters chattering over best waste minimization practices. Experts tout waste diversion and recycling. What about minimizing waste before you get to that point by cutting waste down at the source? A comprehensive and multi-faceted waste minimization program will yield greater results and is more attainable than you may think. By taking part in source reduction, you are directly saving your company money by avoiding waste collection, transportation and disposal costs, and decreasing your costs through lower pollution control and liability and regulatory compliance. As the public becomes more health and environmentally conscious, it is increasingly important for all companies to show that they understand and embrace waste minimization strategies through corporate sustainability programs. Doing this benefits the environment as well as your company. Companies which are socially and environmentally responsible can point with pride to their compliance numbers. This paper outlines best practices for reducing waste at the source as well as strategies for efficient waste management.

### Get Organized

Waste minimization is the responsibility of the entire organization from executives to the Environmental Health and Safety department to marketing. Creating a program that brings your organization together as a team bodes well for your corporate stewardship and leadership capabilities. Encourage workplace dialogue related to waste minimization from the breakroom to the boardroom to increase participation and measure the success of your organization's involvement. Here are some of the people you should include in your waste minimization endeavors:

- Senior leadership: For final approval, general input and other administrative purposes
- EHS: For planning and organization of the technical aspects of the project
- Employees: Those involved in the processes that produce the waste stream
- Marketing: To build a brand image around your sustainability goals
- HR: To integrate sustainability practices into training and onboarding

Part of implementing a waste minimization plan involves creating and managing the plan and training employees on correct procedures. While organizing and training for your waste minimization plan, allow your company the opportunity to look at other successful existing EHS programs and training programs.

### **Cost Drivers**

The total cost of a waste disposal program can often be broken out into training, storage, labor, transportation and disposal. Looking at how different reduction options will impact your bottom line in each of these areas can help in determining which waste minimization best practices also result in cost savings.

### **Tracking and Measurement**

Tracking and measuring source reduction and impact is absolutely necessary since without analyzing where your generated waste streams need to be reduced, there is no way of knowing what waste minimization actions and strategies are essential to achieving your business sustainability goals. To assist companies in developing a tracking and measuring program, the Environmental Protection Agency has developed calculators to help you determine the success of your minimization program once it's in place. You can find these calculators on the Environmental Protection Agency

Website: <http://www.epa.gov/smm>

### **Packaging**

Over-packaging or using disposable packaging can increase the total waste produced by your company and is an easy way to address minimization practices. Ask yourself if items you are disposing need packaging at all. When buying containers for hazmat shipping and disposal of hazardous waste, consider buying those that are reusable and recyclable. In addition to reducing your waste, this tactic will also help you cut costs on packaging. Another technique to apply is a Pack as You Go program where space is tight and there is a routine volume that will be consistently handled. Eliminate shelves full of tagged (and maybe not tagged) bottles that attract the attention of inspectors and streamline the labor requirements to ship the waste in a single unit turning a 3 day full scale lab pack into a routine drum shipment.

### **Selective Purchasing**

The EPA suggests that you purchase products that are durable, reusable and repairable. Top tips for selective purchasing with the intention of source reduction is buying in bulk and avoiding buying single-use products.

When selecting an item, consider the solid waste and toxicity produced from that item. Where you can, select less toxic options. Consider how the product itself will ultimately be disposed of. By seeking to minimize the waste a product creates *before* the purchase rather than *after* the waste is created, you are not only reducing waste but saving time in the waste removal and minimization process post generation.

### **Policy and Equipment Changes**

Another way to reduce waste at the source is to reduce the need for waste generating products. A way to do this is by changing policies at your organization to ensure all products are getting optimal use. An example would be to encourage all paper printing be double sided and all mail sent electronically. Some

of your waste isn't being generated because of what you are purchasing; it is generating because of the type of equipment you operate. Even if the materials you are buying are done with source reduction in mind, there is no way you are going to have the best results if your equipment is old, inefficient, and generates twice as much waste as necessary.

When you know a machine is being inefficient and generating waste, it's time to assess the savings that a new machine would give you in the long run. Once this return on investment is determined, decide whether it would be most beneficial to retire a machine early or re-design the equipment for minimal waste generation. Whichever solution is best for your company, it will be beneficial to your source reduction and waste minimization plan.

### **Efficient Management**

Even with a best-in-class waste reduction program, the reality is waste will continue to be generated and you will be responsible for disposing of it. The challenge and opportunity is to do so in a manner than yields as little impact to the environment as possible. Below are some ideas for managing your waste handling, storage and reuse more efficiently.

### **Waste Characterization**

The waste generator has the ultimate responsibility of determining if their waste is hazardous, so making the proper determination on the type of waste you generate is crucial. There are significant regulatory requirements for handling hazardous waste. The EPA waste identification link provides the framework for making this determination. This link can be found on the EPA website:

<http://www3.epa.gov/epawaste/hazard/wastetypes/wasteid/>

### **Storage Logistics**

There are cost advantages to managing waste in a properly located storage area so that it can be handled less frequently.

Some companies have sites where waste is generated on one part of campus, has to be trucked to another site to be consolidated and a third to store before shipment. Handling is costly and risky. Don't build a storage area in an alley that can fit a SmartCar. Design with the end in mind: Make the case for having the space and you'll save the money in the long term.

### **Segregate Materials That Can Be Recycled**

A manufacturing process may produce a highly flammable waste stream that cannot be recovered and must be disposed of as a hazardous waste. Once the process is complete, a high purity solvent is used to clean the process lines. Many companies will mix the line flush waste with the process waste and send it all out as hazardous waste for fuel blending or incineration. In many cases the line flush waste will only be slightly contaminated and may be able to be recycled. This waste should be segregated from the process waste. By doing this, you can effectively reduce your waste disposal volume and replace the virgin solvent purchases to reduce overall spend.

### **Recycling and Energy Recovery Options**

There are a number of recycling and energy recovery options that should be considered for common waste streams:

- Solvent Recovery - A method to minimize hazardous waste by recovering process solvents for reuse.
- Waste to Energy - The process of burning non-hazardous waste materials for energy recovery. This is a very popular method with significant capacity on the East Coast.
- Commodity vs. Waste - Simple separation can open up many lower cost waste disposal options.
- Wastewater Treatment -The process of converting wastewater into an effluent that can either be returned to the natural environment or reused.
- Construction Debris Recycling - There are recycling options available for asphalt pavement, asphalt shingles, carpet, carpet padding, ceiling tile, drywall, concrete, brick, block, stone and tile.

The EPA Reduce, Reuse, Recycle link and Construction and Demolition Materials link provide information for the recycling of many common waste streams. These links can be found on the EPA Website:

<http://www.epa.gov/recycle> and <http://www3.epa.gov/epawaste/conserve/imr/cdm/>

### **Continuous Improvement**

Waste minimization isn't something you do and then stop. There is always opportunity to minimize your waste. Whether you work at a healthcare institution or in manufacturing, waste minimization is a project you can take ownership of and keep for the long haul. A good way to keep the momentum of a waste minimization program going is to gather a team of interested employees regularly to brainstorm and discuss improvements.

Finally, get creative! The adage one man's trash is another man's treasure can certainly be true in the case of waste minimization. Looking for reselling opportunities with your waste where it can be recycled or used in another manufacturing process step is a great way to reduce your environmental footprint and save money.

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