

Topic Hub: Aerospace Subsection : Reasons for Change

The Aerospace Industries Association estimates that there are 15,000 to 30,000 different materials used in manufacturing, many of which may be potentially toxic, highly volatile, flammable, contain chlorofluorocarbons, or contribute to global warming. In addition, energy and water are consumed in significant quantities. The resulting emissions, wastes, and effluents, and costs associated with these streams and regulations are sound reasons to implement pollution prevention and source reduction whenever possible.

Motivation to conserve energy is especially relevant with current fuel and electricity costs and with pending or recently enacted legislation on greenhouse gas emission limits for higher emitters in many states. Beyond direct cost savings, in many cases, improved energy efficiency can increase product yield through time savings and improved productivity, and reduce emissions of greenhouse gasses from fuel combustion. Energy efficiency can also provide more flexibility over competitors who do not address efficiency issues, by reducing susceptibility to price changes in resources and industry downturns.

Cost of Compliance and Managing Waste Streams

Using raw materials and processes that have an environmental impact are very costly. Most often, businesses usually only account for waste disposal costs rather than considering all of the associated costs with operating inefficient equipment and using toxic raw materials. Federal studies estimate that hazardous wastes cost around \$2 per pound to manage and properly dispose of.

The following table shows the different categories of costs associated with simply being in compliance and those costs incurred that are typically accounted for as oversight. Considering all of the costs associated with wasteful practices may motivate a business to change. (Note: *Italicized items* are costs that are often overlooked, but can truly add to the total costs of managing waste.)

Compliance Costs	Oversight Costs
<p>Receiving Area Spill response equipment Emergency response plan</p> <p>Raw Materials <i>Storage facilities</i> Secondary containment Right-to-know training Reporting and records <i>Safety training</i> Container labels</p> <p>Process Area Safety equipment Right-to-know training Waste collection equipment <i>Emission control equipment</i> <i>Sampling and Testing</i> <i>Reporting and records</i></p> <p>Solid and Hazardous Waste <i>Sampling and Testing</i> Containers Labels and labeling Storage areas Transportation Fees <i>Disposal fees</i></p> <p>Air and Water Emissions Control <i>Permit preparation</i> <i>Permit fees</i></p>	<p>Purchasing <i>Product/vendor Research</i> Regulatory impact analysis <i>Inventory control</i></p> <p>Engineering Hazard analysis <i>Sampling and testing</i></p> <p>Production <i>Employee training</i> Emergency planning Medical monitoring <i>Re-work</i> Waste collection <i>Disposal management</i> Inspections and audits</p> <p>Marketing Public relations</p> <p>Management Regulatory research <i>Legal fees</i> Information systems <i>Penalties and fines</i> Insurance</p> <p>Finance <i>Credit costs</i> Tied-up capital</p>



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<i>Capital costs</i>	
<i>Operating expenses</i>	
Recovered materials	
Inspection and monitoring	
Recording and reporting	
Sampling and testing	
Emergency planning	
<i>Discharge fees</i>	

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