



Technology

Sustainable Manufacturing: 5 Practices That Can Improve Efficiency

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Sustainable practices can bring about financial and environmental benefits to manufacturers. Here are five ways you can embrace sustainability in your facility.

The topic of sustainability has gained interest on a global scale in recent years as national governments and large corporations have sought ways to solve the problem of climate change.

Indeed, sustainability has become a catchall phrase for “green” business practices, but it has a particular relevance to the manufacturing industry.

With manufacturing operations using large amounts of energy and raw materials, industry players who embrace more sustainable practices can gain a competitive edge in the marketplace.

According to *the Environmental Protection Agency (EPA)*, sustainability in manufacturing is “the creation of manufactured products through economically-sound processes that minimize negative environmental impacts while conserving energy and natural resources. Sustainable manufacturing also enhances employee, community and product safety.”

Smaller shops that prefer to work with environmentally friendly companies can maintain a list of these vendors and prioritize using them, embracing sustainable business practices.

The EPA also identifies a handful of reasons why companies are pursuing sustainability:

- To increase operational efficiency by reducing costs and waste
- To respond to or reach new customers and increase competitive advantage
- To protect and strengthen brand and reputation and build public trust
- To build long-term business viability and success
- To respond to regulatory constraints and opportunities

Research shows that customers care about sustainability and want to partner with businesses that incorporate social responsibility practices into their operations. More broadly, sustainability concerns

are becoming an increasingly important factor for American consumers, especially among millennials.

By reducing waste and water usage, using energy efficiently, and even embracing carbon-neutral manufacturing, “the factories of the future have the potential to drive measurable sustainability outcomes as well as reduced costs,” according to *a recent report by Deloitte*.

No matter the size of your shop, there are steps you can take to improve sustainability practices and participate in conserving resources. Here are five ways:

No. 1: Optimize Energy Use

Manufacturing processes currently use roughly one-quarter of the energy in the United States and one-third of the world’s energy, according to Deloitte. Organizations that take steps to optimize their energy use, or consider harnessing the power of alternative energy sources, can improve sustainability and, potentially, lower costs as global energy prices increase.

Practical approaches to energy conservation may include powering down equipment at the end of the day, enabling energy savings settings on all computers, lighting and other devices that can be safely put in low-energy mode.

Other examples of policies that can support smart energy use include *power purchase agreements (PPAs)*, where manufacturers can lock in fixed prices for the supply of renewable energy, sometimes for as long as 15 or 20 years, notes Deloitte. Some larger manufacturers are even investing in on-site generation, using solar panels, wind turbines and geothermal pumps to power their facilities.

Read more: Machine Safety: Here’s Why You Should Be Taking It Seriously

No. 2: Develop Your Sustainability Policies

Your workers can be your greatest allies in the battle to improve sustainability.

That’s why it’s important to develop sustainability policies and procedures to reinforce your aims and make it clear how your workers can help you in your efforts.

Invest time in training employees on best practices and on the importance of sustaining the environment. You may also use these meetings as opportunities to solicit ideas on how to conserve resources and reduce waste.

Consider, too, developing a companywide recycling program for products such as:

- Electronics, computers and monitors no longer in use
- Fluorescent light bulbs
- Disposable PPE such as facial masks, gowns and gloves
- Paper, packaging and cardboard products
- Waste resulting from overproduction, defective products or supply chain changes

Consider, for example, *Kimberly-Clark’s RightCycle program*, which helps you reach your sustainability goals by collecting previously hard to recycle items such as protective clothing, nitrile gloves and safety glasses.

Read more: Video: Tooling Up – How to Properly Dispose of and Recycle Your PPE

No. 3: Sustainable Supply Chains

Sustainable supply chain management involves incorporating eco-friendly practices in your supply chain life cycle, from product design and development to steps such as material selection, manufacturing, packaging, transportation, warehousing, distribution, consumption, return and disposal, *says the Sustainable Supply Chain Foundation.*

Some large corporate purchasers are increasingly requiring their downstream suppliers to meet certain sustainability thresholds. Indeed, as Deloitte notes, supply chain members of the *Carbon Disclosure Project (CDP)* “now regularly ask their key suppliers to disclose detailed environmental performance data.”

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Read more: Exploring the Safety Dangers of Metalworking Fluids

No. 4: Chemical Management

Most manufacturers use chemicals at some stage in their production processes, and of course those chemicals can harm our environment.

Machine coolants, for example, are used extensively in metal cutting operations and consist of a blend of chemical additives, lubricants and water.

Your chemical vendors can help you by training your employees on the proper use and disposal of coolants and other chemicals.

Some shops are adopting minimum quantity lubrication, or MQL: a micro-lubrication technique that eliminates the use of large quantities of water and oil-based coolants and replaces them with a small quantity of lubricant mixed with air.

The method precisely delivers a small amount of lubricant to the cutting tool’s edge, meaning a machinist only uses what’s needed for an application.

You may also consider the types of products used to clean your facility: Can greener, more eco-friendly cleaning products be used instead?

No. 5: Water Conservation

Water resources management is an essential part of achieving sustainability.

Conserving water is something a facility can achieve by reducing the opportunities for wasting it.

Facility managers may consider using low-flow toilets and urinals and water-efficient faucets to conserve water in their buildings.

Reducing water use can lead to major savings with lower water and sewer bills.

What measures are you taking to foster new, more sustainable ways of operating? Share your thoughts and insights in the comments below.

