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Site Sustainability Policies

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Preface

Welcome to the PennEngineering Site Sustainability Policies Document.

At PennEngineering, we are committed to driving sustainability across all our manufacturing sites. This document outlines a set of sustainability-related requirements and recommendations designed to guide us to become a more sustainable company.

Each action within these guidelines is clearly labeled as either a recommendation or a requirement, ensuring clarity on what <u>must</u> be done versus what <u>should</u> be done.

Our objective is to provide a structured pathway to achieve our sustainability goals while highlighting any significant cost benefits that can be realized through these actions. The guidelines contained in this document are comprehensive and may impact various departments and groups within our organization.

It is the responsibility of site managers to champion these policies and ensure their implementation throughout their respective facilities. Where available, Environmental, Social, and Governance (ESG) or Sustainability teams will support the affected departments in putting these policies into practice. They will also play a crucial role in auditing and ensuring compliance with the requirements.

Importantly, this document does not duplicate the policies laid out in the PennEngineering Employee Handbook or regional handbooks, nor does it cover legal requirements. In instances where local and regional laws and regulations conflict with our guidelines, the legal requirements will always take precedence.

Recognizing the importance of continual improvement, this document is intended to be a living resource. We will continue to evolve our practices and add new ones as we learn and progress on our sustainability journey.

Thank you for your dedication to reviewing and implementing these practices at your sites. Together, we can drive PennEngineering towards a more sustainable tomorrow.

Thank you,

Brian Bentrim
Global VP Sustainability
PennEngineering

What's New

This second revision of PennEngineering's site policies focuses on waste reduction. The policies for **"Compressed Air Leaks"**, **"Water Leaks"** and **"Window and Doors"** all have been strengthened from recommendations to requirements. These all address losses at the site that cost money and resources. Addressing waste addresses resources spent for no gain and should be a priority to correct.

Adding to the recommended policies is one on programming locking out **"Thermostats"**. This will allow the optimization of the heating and cooling and save energy and money.

We are also adding a recommendation for sites to join the PennEngineering's **"Global Community Service Team"**. This is a mature team that already includes most medium and large sites, but welcomes even the smallest office.

New initiatives will be shown here in summary with links to the details.

Policies

This section outlines our various policies. **For quick reference, mandatory tasks will be marked with a 🌳 (tree) in the right margin, while recommended actions will be marked with a 🌿 (branch).**

Each policy will explain what needs to be done and why, including the benefits. When there are clear cost savings, these will also be briefly detailed to justify certain actions.

This symbol will be used to highlight where money can be saved with the implementation.

Coffee

Coffee provided in offices and shops should be ethically sourced. Avoid single-use options like Keurig cups, or ensure they are recyclable and properly recycled.

Why: Much of the coffee we consume today is produced on plantations where workers face harsh conditions, receive poor pay, and sometimes even include young laborers. By choosing ethically sourced coffee, we ensure that we do not support these practices. Additionally, single-use packaging has significantly increased waste in a short time.

Company Vehicles

It is highly recommended that all new company vehicles be electric. This applies to factory vehicles such as trucks, tractors, plows, and fork trucks, as well as the cars provided to employees.

Why: Electrical vehicles (EVs) have a larger carbon footprint during production, but their carbon emissions during use are significantly lower. Over a typical lifespan, EVs result in much less overall carbon emissions, especially when driven frequently.

Cost Benefit: Over the lifespan of an EV, the cost of ownership is significantly lower compared to traditional vehicles. This reduction in cost usually outweighs any initial expenses related to energy efficiency. Additionally, installing EV chargers at our company sites and benefiting from lower electricity rates at our facilities further decreases the overall cost of ownership.

Compressed Air Leaks

It is important to identify and fix compressed air leaks as soon as possible. Air compressors are expensive to operate, consuming a lot of energy. Addressing air leaks reduces both costs and emissions directly. Each plant **must** have a program that regularly reviews the shop floor for leaks of the air lines and promptly addresses these leaks. Best practice is a monthly program.

Why: Running the compressors to fill a system with multiple leaks wastes energy and is inefficient.

Cost Savings: It is estimated that one single leak in a compressed air system costs about $35 annually.

Computer Use

When not in use, monitors, computers, and other peripherals should be turned off. At the end of the workday or shift, make sure to power them down completely. Even when idle, these devices can consume power to stay in a ready state. Adjust your computer's energy settings to minimize this power draw.

Why: Each computer, screen, printer, and peripheral device may use just a bit of electricity, but together they add up to a significant energy draw. By turning off these devices when they're not in use, you can help reduce energy waste and support our carbon neutrality goals.

Equipment: Electrically Powered

It is highly recommended to use electric energy for all new equipment, including heaters, ovens, furnaces, water heaters, cleaners, and any other facility or office devices. This is especially important for equipment with a long lifespan, as electric energy is a safer and more sustainable option compared to natural gas, propane, or other combustible fuels.

Why: Our mission to become carbon neutral involves eliminating carbon emissions. We're transitioning to green electricity through on-site generation and improvements in the electrical grid, which means more of our energy will gradually become carbon-free. Though this shift won't happen overnight, significant progress is being made behind the scenes with utility companies. Eventually, all electrically powered devices will be carbon neutral. However, for any on-site combustion, we'll need to replace equipment with carbon-neutral alternatives to meet our carbon neutrality goals.

Equipment: ENERGY STAR or Equivalent

All new appliances and equipment purchased **must** have an ENERGY STAR rating, or an equivalent. This applies to all office appliances like refrigerators, coffee pots, and dishwashers, as well as shop equipment such as heaters, cleaners, and other manufacturing tools.

Why: Products with the ENERGY STAR label help you save both energy and money, all while maintaining high performance. By consuming less energy, these products also contribute to reducing greenhouse gas emissions, which play a role in climate change. Visit EnergyStar.gov for more information.

Cost Benefit: Reducing electrical consumption will lower operating costs throughout the asset's lifetime. This typically compensates for any extra expenses related to improving energy efficiency.

EV Chargers

It is recommended that each site install EV chargers. This is a great way to encourage employees to drive electric vehicles for their daily commute.

Why: One part of PennEngineering's carbon footprint comes from employee commutes. By encouraging and supporting the use of electric vehicles for these commutes, we can help reduce our overall carbon emissions.

Global Community Service Team

Each site is strongly encouraged to join the global community service team. This team coordinates our efforts in supporting the local communities where we live and work. They setup events such as blood drives, food drives, and other fundraising events supporting the needs of our communities. The Global Day of Giving is the flagship event of this team.

This is locally driven, but coordinated across the organization by a corporate leadership role. Each site, however small, is encouraged to reach out and join so we can make a difference to the people we live and work around.

Green Energy: Solar

Every location should explore opportunities to generate its own green energy. Solar panels are the most common option, but other green energy systems are also viable. Prioritize installations on rooftops first, then on existing impervious surfaces like parking lots, and lastly on green spaces. If we own the building, we should install our own solar systems. If we lease or rent, we can partner with or encourage the landlord to install them.

Why: Installing our own green energy sources speeds up our move towards carbon neutrality. While these systems alone (without batteries or energy storage) won't keep the lights on during brownouts or blackouts, they do prioritize our usage. Additionally, as demand for electricity grows and strains the energy grid, local, small-scale power generation helps ease this burden.

Cost Benefit: These systems generally have a payback period of 5 to 10 years. Although this timeframe is longer compared to other investments, they compensate by meeting customer demands for increasing the use of green energy in production.

ISO 14001: Environmental Management Systems

ISO 14001 sets clear environmental goals, metrics, and methods for evaluation and reporting. It uses internationally recognized practices that can be integrated into other management systems. The aim is to reduce waste and improve our environmental impact in a sustainable and business-minded way. Each location should strongly consider adopting these practices.

Why: Our customers appreciate our commitment to environmental practices, and these efforts also drive us to improve continuously. By implementing these systems, we will achieve our carbon footprint goals, adopt circularity practices, and enhance our overall environmental impact.

ISO 45001: Occupational Health and Safety

Implementing ISO 45001 at each location should be strongly considered. This system integrates employee safety reviews and metrics into our management processes. Like other ISO systems, it is designed to work seamlessly with existing management system frameworks.

Why: Implementing these practices ensures that our employees remain healthy and safe, which our customers also view as responsible behavior. By putting these measures in place, management demonstrates their commitment to employee safety and workplace improvements. This not only boosts morale but can also reduce work-related injuries and insurance claims.

ISO 50001 (Energy Management) or ENERGY STAR Certification

Sites should consider getting certified with ISO 50001 or ENERGY STAR. These certifications help us review how we use energy and implement systems to reduce consumption. Not only are these certifications environmentally friendly, but they also save on electricity costs. Plus, customers often prefer vendors with these certifications.

Why: Buildings certified by ENERGY STAR use less energy and, on average, emit 35% fewer greenhouse gases. By earning this certification, you're helping to combat climate change and making a positive impact on our environment. Visit EnergyStar.gov for more information.

Cost Benefit: Implementing ISO 50001 will help uncover numerous opportunities for energy savings, leading to significant cost reductions. While the implementation itself may not offer an immediate payback, it will reveal various other cost-saving opportunities over time.

Lighting: LED

All sites **must** switch to LED lighting by 2025. This includes areas such as production, warehousing, utilities, offices, and outdoor areas. From 2025 onward, only LED lights will be used.

Why: LED lighting consumes less energy than any other option and lasts much longer. This efficiency plays a vital role in helping us achieve our carbon neutrality goals.

Cost Benefit: Switching to LED lighting from traditional options offers a quick return on investment and leads to significant cost savings.

Lighting: Motion Detection and Switching Off

To conserve energy, install motion sensors to automatically switch off lights when no one is present. Additionally, make it a habit to turn off lights in unused areas and at the end of your shift. Posting signs at exits can help reinforce this behavior. This is especially important in low-traffic areas like bathrooms, utility closets, and back hallways, where leaving lights on can waste significant energy.

However, safety should always come first. Ensure that parking lots and areas with obstructions or uneven surfaces remain well-lit to prevent accidents and ensure everyone's safety.

Why: Excess lighting not only wastes electricity but also contributes to light pollution, which can confuse animals and insects.

Cost Benefit: Installing a basic motion-detecting switch can quickly pay for itself through energy savings.

Lighting: Natural Light

Maximize the use of natural light instead of relying on artificial sources. Install large windows with diffusing shades that can be adjusted to allow light in without blocking it completely. If indoor lighting isn't necessary, keep it turned off.

Why: Switching to energy-efficient lighting can significantly lower electricity costs.

Going Paperless

Transitioning to a completely paperless work environment might seem ambitious, but reducing paper use is a significant step towards being more eco-friendly. Before hitting print, ask yourself if it's necessary. Posting reminders near shared printers can help reinforce this habit.

Consider purchasing recycled paper to minimize environmental impact. Remember, paper is one of the easiest materials to recycle. Used paper can often be repurposed as scrap paper, but ensure confidential documents are shredded, not reused.

When paper has served its purpose, recycle it. Whether shredded or whole, make sure it goes to recyclers for reuse. Additionally, printers **must** be set to default to double-sided printing—it's a simple change that can drastically cut down paper consumption.

Why: The production of paper consumes a significant amount of water and energy, and it greatly contributes to deforestation. This industry is one of the largest consumers of water and ranks high among the most polluting industries. It's also responsible for about 5% of global deforestation, with some estimates suggesting that over 40% of harvested trees are used for paper production. Additionally, the paper industry is a major contributor to global warming pollution in the industrialized world.

Cost Benefit: Implementing this has minimal costs and can significantly reduce paper-related expenses for your location.

Paper Products

We should source eco-friendly options for paper towels, napkins, toilet paper, and other paper products.

Why: Paper use significantly harms the environment in many ways.

Ride Sharing

Plants should encourage and promote ride-sharing among employees for commuting and local off-site trips. This can be facilitated by having a list board (either paper or virtual) where people can offer or seek ride-sharing opportunities. Additionally, providing reserved parking spots for ride-share vehicles can further support and encourage this practice.

Why: Reducing commutes can significantly lower the carbon footprint of our facilities. By sharing a ride with others, we help decrease the overall distance traveled, which positively impacts our Scope 3 Carbon Footprint emissions score. Every mile saved makes a difference.

Single-Use Plastics

Single-use plastics, as defined by the U.S. Department of the Interior, include items such as plastic and polystyrene food and beverage containers, bottles, straws, cups, cutlery, and disposable plastic bags. These items are designed for one-time use and then discarded.

We should make every effort to reduce and eliminate single-use plastics in our workplace. For example, replace plastic cutlery and flatware with reusable metal versions that can be washed and reused. Even paper cups with plastic linings, often mistakenly seen as eco-friendly, can contaminate recycling streams. Instead, opt for reusable mugs, bottles, and glasses to minimize waste.

Why: Plastics take a very long time to decompose, often lasting for decades or more in their original form. Even as they break down, they leave behind microplastics that pose serious risks to wildlife. These plastics accumulate in our oceans, lakes, ponds, rivers, streams, and wetlands. Due to their significant environmental impact, many countries have banned them entirely.

Cost Benefit: While reusable cutlery and flatware might have a higher upfront cost, they quickly pay for themselves over time. Although you need to be careful not to accidentally dispose of them and some loss is inevitable, the savings are significant. For example, 100 plastic forks cost $14 (or $0.14 per fork) on Amazon.com, while 16 metal forks are priced at $10 (or $0.63 per fork). After just five uses, the metal forks have paid for themselves.

Thermostats

Each site should set thermostats for an efficient heating or cooling of the space. It is recommended that timers be included to reduce the energy needed to heat or cool over night and over weekends if the space is unoccupied. Lockouts for thermostats are also encouraged to reduce the ability of people to make adjustment or move the thermostats from these optimized settings.

During the summer, it is recommended to keep the thermostat a bit warmer and during the winter a bit cooler. It is much more energy efficient to wear seasonally appropriate clothes than overly cool or heat the space.

Trash, Recycling, Composting & Electronics Waste

Each facility **must** have a program in place for separating trash, recycling, and, where possible, composting. Proper signage and clear labeling of waste containers should make it easy for employees to determine where to dispose of different types of waste.

In a manufacturing environment, scrap and disposal containers for both solid and liquid waste **must** also be clearly labeled to indicate what type of waste should be placed inside.

Each plant **must** ensure that waste is collected by agencies that follow the established disposal plan. This includes on-site composting for community or site gardens where applicable.

Electronics waste **must** be collected separately and disposed of according to local waste disposal regulations.

Why: Properly separating trash, recycling, and other waste ensures efficient recycling processes. It also reduces landfill waste and promotes a circular economy.

Water Bottles and Dispensers

Plastic water and soda bottles are everywhere, and their waste often ends up polluting our land and waterways. Instead of relying on plastic bottles, offices should install water filling stations. This way, employees can easily fill cups, glasses, and reusable bottles with clean water.

Why: Every year, Americans alone purchase over 25 billion water bottles, most of which end up in landfills. Adding to this problem, each bottle can take up to 1,000 years to decompose, significantly contributing to plastic waste. By reducing our use of plastic bottles and encouraging others to do the same, we can take small but impactful steps towards addressing this issue.

Water Leaks

Clean fresh water is one of life's most important resources and it continues to be further stressed world-wide. To help conserve water, leaks **must** be identified and fixed as quickly as possible. To help address leaks promptly, sites **must** place signs in bathrooms and kitchens that inform employees to whom to report leaking to within the site.

Why: Leaking faucets and running toilets can waste a significant amount of water. For example, an open fill valve on a toilet can waste up to 4,000 gallons (15 kL) of water every day.

Windows and Doors

Each site must regularly inspect windows and doors to ensure they seal properly and maintain high efficiency ratings. Actions **must** be taken to correct leaks. The U.S. Department of Energy provides guidelines to help confirm that your windows meet the sufficient ratings for your area. Often, simple actions like adjusting stops, replacing seals, or cleaning frames can restore windows and doors to optimal condition.

It is also strongly recommended to replace older windows and doors with new, more efficient ones to significantly cut down on losses.

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Why: Poorly sealed doors and windows can lead to significant heat loss during winter and cooling loss during summer, resulting in higher energy bills as you strive to maintain a comfortable environment.

Cost Benefit: Replacing old windows can offer significant cost savings. Energy efficiency companies can help you calculate the precise payback, ensuring you understand the financial benefits of this upgrade.

Summary

Let's keep driving PennEngineering's sustainability efforts forward. By collaborating with each other and like-minded companies, we can collectively make a positive impact on the world. We encourage all employees to not only follow these policies at work but also to incorporate them into their daily lives. Remember, every small action counts.

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Thank you!

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